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AND

HORTICULTURAL ADVERTISER.

DEVOTED TO HORTICULTURE, ARBORICULTURE, BOTANY AND RURAL AFFAIRS.

EDITED BY THOMAS MEEHAN,

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The Gardener's Monthly.
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HINTS FOR JANUARY.

FLOWER GARDEN AND PLEASURE GROUNDS.

Now that our old list of Southern subscribers is beginning to swell to the dimensions it had reached before the war, we begin to feel the difficulties we formerly experienced in making these monthly hints prove acceptable to *all* our readers. Now, for instance, while they are planting peas and potatoes in South Carolina, we are only just having our winter's frost commencing. We have therefore again to revert to the rule with which we started these Hints in the *Monthly*, namely, as nearly as possible confine ourselves to *principles*. We cannot of course do this without some practical illustrations, but if the readers remembers that all these refer to the course of things through the *Middle States*, there will be no difficulty in making such allowances for climate north and south of this line, as will render the *hints*, it is hoped, valuable to all our readers in a greater or less degree.

We have said in former volumes, how much interest a few changes annually made in the minor details of a flower garden give to ones grounds. It is as well to think of these now, and plan them before hand.

So many new and useful hints for flower-garden details have appeared through our last year's volume, that our readers will, many of them, be prepared at once with plans of improvement. Ribbon flower-beds, peculiar for massing; improved forms of flower-beds, or their change of position to other parts of the lawn or grounds; the introduction of vases, arbors or trellises for climbing vines,—adding a clump of shrubbery here, or removing one there. All these and many other hints for improvement which we have suggested in our pages, should now be reviewed, and put into shape for execution the moment the approaching season favors. No matter how small the flower-garden may be, the aim should be to improve as we go, and make each season's garden look better than the last. We never see a "finished place," but we know instinctively that the owners take no pleasure in it. Such persons feel they must "keep up appearances;" duty requires them to "look so tidy," and family honor demands that some "pride be taken in the place." Hence the money must be spent,—not exactly grudgingly, but yet with a species of wish that their position in society would demand less of them. We know from the experiences of various parties who have been "reformed from the error" of this way, that a desire to improve gives the owner of the oldest and most stately establishment a pleasure in its management, which it is almost impossible for him to conceive at the outset.

The actual operations in this department will be confined to preparing soils, manures and other items, for early spring work.

GREENHOUSE AND PLANT CABINETS.

Many of our readers have only a few window plants. These are often kept too warm, too wet, have too little sun light, and have too many insects. In towns in addition to all these, they have often too much of the fumes of burning gas. Leaks or escapes from the gas pipe is a well known injury to plants, but it is not so well known that plants suffer, though in a less degree, from the common burning of coal gas. The trouble with most room cultivators is to know when plants get too much attention. Too much insects is easily known, one—a single one—is by far too many. We still think there is nothing like coal oil to destroy all kinds of insects. A very little—just enough to make a colored scum on the surface of a tub of water is enough, and in this the insect covered plant may be dipped, inverting the pot and plunging only the plant, and not the pot of course. If too much oil is used the plant may be injured. Too wet is when a plant seldom gets dry—a healthy plant should get dry, and have light dry looking surface soil, every two or three

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days, as to heat a temperature of about 55° or 60° is best for room plants, below that they do not flower freely, above they grow weak, especially if they have not a great deal of sunlight. Indeed heat should be in proportion to direct sun light on the plants.

Roses, when they are forced, do much better when the pots are plunged in some damp material. When no better plan offers, they may be set inside of a larger pot, with moss between the space around. All plants that come into flower through winter should have those positions afforded them that have the most sunlight, especially the early morning light.

Ferneries are now so deservedly popular, that we must have a word to say for them at times, though their management is so simple, there is little one can say. It is probably their ease of management, and the great results obtained for the little outlay of care, that has rendered them so popular. It should not, however, be forgotten that the cases in which they are enclosed is not to keep out the air, but to keep in the moisture, as ferns will not thrive in the dry atmosphere of heated rooms. A few minutes' airing every day will, therefore, be of great benefit to them. Decayed wood, (not pine), mixed with about half its bulk of fibrous soil of any kind, and a very small proportion (say a tenth of the bulk) of well-rotted stable-manure, makes a good compost. Most kinds particularly like well-drained pots. This is usually effected by filling a third of the pots in which the ferns are to grow with old pots broken in pieces of about half an inch square, on which a thin layer of moss is placed, before filling the pots, to keep out the soil from choking the drainage.

Many very pretty ferneries are made up entirely of native ferns, some species of which are within the reach of every one. Of the exotic ones, however, that are now general in most florists' establishments, and are remarkable for their elegance and beauty, we may name Selaginellas (formerly Lycopodiums) S. stolonifera, S. densa, S. Mertensii, S. denticulata, S. cordifolia, S. flabellaris, Adiantum concinnum, A. pubescens, A. cuneatum ; Pteris longifolia, P. serrulata, P. hastata ; Polypodium Sieboldii, P. glaucum ; Doodia caudata, Gymnogramma chrysophylla, Platyloma rotundifolia, Nothoclæna nivea, Pteris geraniifolia, Hemionites palmata. This will form a good and easily obtained collection to commence with. Ferns are easily raised from seed. Shallow pans of very sandy soil should be procured and filled within an inch of the rim. The seed, which is obtained from the brown lines or spots (called by botanists, Sporangia) on the under surface of most mature fronds, should be sown on the surface of the soil, well watered with a very fine rose, window-glass placed closely over the pans, to keep in the moisture and keep out small insects, and the pan themselves set in a heat of about 50°, when the spores will germinate in about two months.

Where the air is dry, if rooms or greenhouses, frequent syringings are of much benefit to plants. Besides, cleanliness keeps down insects and checks disease in plants as in animals. Most old fashioned lady gardeners (and may we ever bless them for the many lessons they have taught us !) take every opportunity to set their window-plants out of doors whenever a warm shower happens to occur. In winter a rain at a temperature of 40° or 45°, which often occurs, might be called a "warm shower." Cold water does not have half the injurious effect on plants that cold air has. When plants get accidentally frozen, the best remedy in the world is to dip them at once in cold water and set them in the shade to thaw.

It is better to keep in heat in cold weather by covering, where possible, than to allow it to escape, calculating to make it good by fire-heat, which is, at best, but a necessary evil. Where bloom is in demand, nothing lest than 55° will accomplish the object ; though much above that is not desirable, except for tropical hot-house plants. Where these plants are obliged to be wintered in a common greenhouse, they should be kept rather dry, and not be encouraged much to grow, or they may rot away.

After Cyclamens have done blooming, it is usual at this season, to dry them off ; but we do best with them by keeping them growing till spring, then turning them out in the open border, and re-pot in August for winter flowering.

Mignonette is much improved by occasional waterings with liquid-manure.

In managing other plants, where there are several plants or varieties of one species, and command of different temperatures, it is a common plan to bring some forward a few weeks earlier than others in the higher heat, thus lengthening the season of bloom. This applies particularly to camellias and azalias ; the former are however, not so easily forced as the latter, being liable to drop their buds, unless care be taken to regulate the increased temperature gradually.

COMMUNICATIONS.

WELL-TESTED EVERGREENS.

BY JOSIAH HOOPES.

Read before the Penna. Hort. Society, Nov., 5 '67.

In my remarks this evening, I do not propose to offer any new theory for your consideration, and I may well doubt having any additional facts to lay before you, in connection with the subject of "Well-tested Evergreens." But as every one who has been engaged in the cultivation of the soil, must necessarily gain many little items of experience, the writer as an humble co-laborer in the study of horticulture, trusts he too may have gained some little practical knowledge in the pursuit ; but whether of sufficient importance to impart unto others, is for his audience to judge. The term "well-tested" admits of several constructions. What may prove entirely hardy in a light, well-drained soil, frequently languishes on the heavy clay of an adjoining lawn. And again, some conifers will flourish in a protected situation, which will not survive the first winter in an open exposure on the same grounds. Some species also prefer a moist atmosphere, without regard comparatively to the severity of our winters, whilst others prefer the air to be rather dry and warm. The true meaning of the term "well-tested," should only be applied to those species which have been thoroughly tried in every possible situation, and for a sufficient term of years to enable us to judge of their true character. Thus, we have many excellent evergreens that have proven of great value wherever tried, although sufficient attention has not been given them in all sections of the country to enable us to record their success without extenuating circumstances.

In the comparative graces of the Coniferœ, we again find a dissimilarity of opinion--some planters admiring the peculiar character of an individual tree, whilst others depreciate it in equally strong terms. We cannot, therefore, establish any undeviating rules for regulating beauty, nor can we decide what one tree is the most appropriate for every situation. The law that governs the picturesque and the beautiful are so widely divergent, that although our great horticultural leaders in tasteful planting have endeavored to point out the proper course for us to pursue, we yet find too many obstacles to surmount before we can reconcile these conflicting opinions to our own satisfaction.

Commencing with the Pine-family proper, we have the largest genus belonging to the order. It, however, embraces very many species that are entirely too tender for our northern climate, and notwithstanding the great beauty of such, it is needless to cultivate them with the least hope of success. One of the oldest members of the family to be found in our collections, is the *White Pine*, (P. strobus,) and we feel much like adding, the handsomest also ; for whilst there are some more graceful, and others with more showy foliage, or a more compact habit of growth, there is yet a quiet grandeur and elegance in this old friend, to us more attractive than its relatives of recent introduction. The prejudice of education is strong within us all, and the White Pine of our boyhood days still lingers in our memory as one of those pleasant reminiscences over which we love to linger and frequently recall. Stiff and formal though it is, its delicate glistening foliage is certainly much to be admired. Its hardiness has strong claims upon our notice, and its easy cultivation forces us to accept it. It is, however, quite as liable to become disfigured by age as as other conifers, and perhaps more so than some ; yet the glorious old specimens in the pine-woods of our state affords ample evidence of its almost sublime beauty at an advanced age. Gilpin rejects it for its "polished bark, regularity of stem, and meagreness of foliage," but Gilpin, we dare say, never saw them in all their beauty as they cover the sides of their native Alleghanies.

A fit companion for the preceding, and to which it is closely allied, is the *Bhotan Pine*, (P. excelsa). Having been introduced a number of years since, and fairly tested, we may be justified in criticising its merits. In regards to its claims as an ornamental tree, there can be but one voice. Its form and foliage is remarkably beautiful, but owing to some peculiar and as yet undecided cause, the tree is liable to blast or blight in many situations. This peculiarity was formerly attributed to the attacks of a small *pine borer*, but upon more careful study, the facts point to a different origin, and is perhaps owing to an uncongenial situation. Some writers affirm it is the result of parasitical fungi. However, its otherwise valuable properties are seriously impaired on this account.

The *Swiss Stone Pine*, (P. cembra), although of slow growth, whilst young, is one of the hardiest and most attractive species belonging to the genus. Compact in form, very dark green color, and remarkably upright in growth, it always attracts attention, and we, therefore, take great pleasure in recommending its dissemination. It will not assume its most elegant verdure in a dry sandy spot, as some others, but prefers a rather rich alluvial soil to develop its greatest beauty, and in such, forms a fine specimen.

The *Scotch Pine*, (P. sylvestris,) is invaluable for forming plantations on thin rocky soils, or for cheap screens and barriers from the wind ; but for purposes of ornamentation, we cannot class it among the finest trees. With age it becomes open and unsightly, the lower limbs gradually die out, and the tree becomes disfigured to such a degree, that the owner, although, however reluctantly is obliged to remove it in most instances. It is never noted for denseness, unless thickened artificially by removing the centre buds from the leading side shoots, and thus preventing its inclination to spread.

One of the most desirable members of this family is the *Austrian Pine*, (P. Austriaca), now so well know and justly appreciated for its many excellencies of character. Notwithstanding a certain coarseness of growth, which only becomes apparent upon close inspection, we are readidly induced to overlook this, in view of its rapid, luxuriant growth, dark green color, undoubted hardiness and adaptability to most soils and situations. At a distance it forms a remarkably conspicious object in a collection, and is destined to be one of our greatest favorites in the Coniferæ.

Among the native species belonging to this genus, we have a preference for the *Pitch Pine*, (P. rigida). When grown with care, or even in a proper situation in its native localities, this tree frequently commands respect. Under such circumstances the foliage is rigid, dark green in color, and it attains a large size. As it is found naturally on dry, barren, or sandy soil, it usually flourishes better in a well drained situation than where the soil is retentive of moisture.

A suitable companion for the above, is another native tree which is liable to be overlooked in our haste to introduce uncertain and unreliable novelties. The *Northern Yellow Pine*, (P. mitis), (I use the term *northern*, in contradistinction to the *P. Australis*, which is frequently called Yellow Pine in the south,) is a really handsome species, but which has created the impression of unsightliness from the fact of its usual habit in its native woodlands. When growing wild in dense masses or clumps, the trees are very frequently disfigured by their close proximity to each other, hence the open straggling appearence too often noticed. A solitary specimen growing in a generous deep loam, not too wet, gives one a very different impression. The leaves are then quite dark, rather long and slender, and the tree attains a large size.

Another native species entirely unknown in our ornamental grounds, is the rare *Table Mountain Pine*, (P. pungens). If cultivated alone for its curious cones, it would still be sufficiently deserving of a place in our larger collections at least. But we feel confident that with care and attention the habit of the tree will be much improved, and its merits in consequence be justly esteemed.

In concluding this family I wish to call attention to the pretty little *Dwarf Pine*, (P. mugho, known also as *mughus, pumilio, montana, &c.*), as an excellent plant for the shrubbery, or small places. Being quite hardy, very compact, and of a dark green healthy color, it is liable to none of the objections that are frequently urged against many other species. I might extend this list and embrace others of the family that I feel confident will prove deserving, but as they are not emphatically "well-tested," I reluctantly pass them by, simply desiring planters to give such species as *Lambert's Pine*, (P. Lambertiana,) *Corsican Pine*, (P. laricio), *Heavy-Wooded Pine*, (P. ponderosa,) *Pyrenean Pine*, (P. Pyrenaica,) &c., a fair and impartial trial, as they have succeeded well in many situations.

In the genus *Abies*, we mention first as "well-tested" the *Norway Spruce*, (A. excelsa,) for in the whole list of available conifers, perhaps none has given such universal satisfaction as this. Whether in the small door-yard of the rural village, or in the extensive collection of the more favored lover of nature, this beautiful species appears at once appropriate and useful. True, some writers have endeavored to disparage its use by the cry of formality, but we consider this unseemly and totally uncalled for. Every species has its own peculiar type of growth, which is transmitted from one generation to another in an almost undeviating manner, and the result is either a recommendation or a fault. The most elegant tree known to arboriculturists, becomes in fact, formal and unpleasant to the eye, if used too freely and without proper judgment. The Norway Spruce is, however, too well known and deservedly appreciated to require any encomiums at the hands of our writers of the present day.

The *White Spruce*, (A. alba,) is an especial favorite wherever tested. Coming to us from the northern sections of our country, where it endures the utmost rigors of a severe climate without injury, we are thus assured of its reliability in this respect. In point of beauty, it also takes a front rank among its kindred. The form of the tree is upright and strictly conical, exceedingly dense in structure, owing to its innumerable short branches ; the foliage is charmingly tinged with a light bluish glaucousness, and the tree, although seldom attaining a large size, usually perfects a fair annual growth. In view of its many excellent points, we may be pardoned for expressing the opinion, that this species is the most valuable evergreen for our climate belonging to the second class of growth. There are other species, members of this genus, which have thus far given universal satisfaction wherever grown, but as their cultivation has heretofore been limited to a few collections, we cannot perhaps claim for them a place in the present list, although desiring to advance the claims of the beautiful *Menzies Spruce*, (A. Menziesii); the unique and very graceful *Oriental* and *Obovate Coned Spruces*, (A. orientalis and A. obovata,) and which are not identical according to recent writers on the Coniferæ.

A new genus of evergreens, formerly classed with the true Spruces, is now called the *Hemlock Spruces*, (Tsuga), having for its type our well known and beautiful species, (Tsuga Canadensis). So well are we assured of its reliable character, that we can confidently place it next in point of usefulness to the Norway Spruce. We adopt this course from several considerations, and after a thorough study of its habits and peculiarities. First, in view of its unexceptionable character for hardiness ; Secondly, on account of its truly graceful habit of growth, delicate linear foliage and charming verdure ; and lastly, for its perfect adaptation to all soils, if not exceedingly dry. Whether under the shade of other trees, or in the open woodlands, these same characters mark its every stage of growth ; but when carefully grown upon the lawn its most excellent points become apparent, and it then constitutes a formidable rival for the rare and highly extolled members of the tribe. It has been charged with disfigurement when old, and in refuting this doctrine we can speak from experience, that it is not more liable to such defects than others which have been more highly eulogized. In the localities where it is found in all its native luxuriousness and wildness, the grand picturesque appearance of the aged trees are worthy of especial notice, and in place of being deemed unhandsome, are really attractive to the true arborist. Other species of Tsuga are either too tender for our climate, or are yet insufficiently tested for our purpose, excepting the magnificent *Douglas' Spruce*, (T. Douglasii), which in favorable localities only, forms a satisfactory specimen.

The *Firs*, (Picea), are closely allied to the Spruces, and are in point of usefulness, no way inferior to them, containing as they do, so many superb species, notwithstanding the greater portion have not been sufficiently proven in every locality. The oldest members known to our aboriculturists,is the *Balsam Fir*, (P. balsamea), a familiar native species of undoubted hardiness, but which never, or at least very rarely, ever forms a fine adult tree. It is very handsome while young, but the leaves soon disappear from the lower branchlets, and an open straggling specimen is generally the result.

The *European* or *Common Silver Fir*, (P. pectinata), forms a majestic tree, and if not disfigured during an occasional severe winter, presents a fine object. The foliage of this species is dark green and glossy, with silvery glaucous bands on the under side. The great drawback to its culture, however, is its proneness to form several leaders, and it, therefore, requires unceasing vigilance to preserve a perfect shape. It is more liable to be injured during severe winters, when growing in wet retentive soils, than in contrary situations.

The glory of this genus is reserved for those species that are comparatively rare in this country, and which have not been extensively cultivated. The following are quite hardy in the vicinity of Philadelphia, so far as I have been able to ascertain, viz : *Nordmann's Silver Fir*, (P. Nordmanniana), *Mount Enos Fir*, (P. cephalonica), *Noble Silver Fir*, (P. nobilis), *Great Silver Fir*, (P. grandis), *Siberian Silver Fir*, (P. pichta), with the following that are only partially hardy, viz : *Indian Silver Fir*, (P. pindrow), *Pinsapo Fir*, (P. pinsapo), and *Webb's Purple-coned Fir*, (P. Webbiana).

The Arbor-vitæ class of evergreens, distinguished of late as the *Thuja* and *Biota* genera, are well worthy of consideration. The genus Thuja embraces our American species, and is represented by the well known type T. occidentalis. Its reputation in all sections of our country as well as in Europe, is of the highest order, or for groups and ornamental hedges. It can never be used for creating grand effects in landscape gardening, as its size and general appearance conveys rather the impression of tameness and quiet beauty. It is unquestionably hardy, free from disease and insects generally, and so cheaply procured, as to place it within the reach of every one.

A variety of this species, of whose origin there is some doubt, is known among cultivators as the *Siberian Arbor-Vitæ*, (var. Siberica); and whilst many will ridicule the idea of a Siberian nativity, yet its exceeding great powers of endurance entitles it to the name. After a thorough test of about fifteen years, the writer takes great pleasure in giving it a high recommendation. Quite as hardy, if not more so than its parent, with a compactness of growth unexcelled by any other conifer, of a perfect conical form, and remarkably dark green color, it may well enter the lists for the prize of perfection. There are also several other pretty varieties, which have proven well worthy of dissemination, as for instance, *Hoveys*, *Booth's*, &c., &c.

The foreign genus, known as the *Chinese Arborvitæ*, (Biota orientalis), is entirely unworthy of our notice, as it is open in construction, quite too tender for our climate, and at best a sickly looking straggling bush. There are, however, a few unique and desirable varieties originating from it which are quite beautiful when growing in favorable localities. I allude to the *Golden Arborvitæ*, (var. aurea), *Variegated Arborvitæ*, (var. variegata), *Glaucous-leaved Arborvitæ*, (var. glauca), &c.

The *Red Cedar*, (Juniperus Virginiana), is our largest hardy representation of a very numerous genus generally not of sufficient size to be classed as trees. When growing in thickets or close clumps, without sufficient space to develop its natural form, this otherwise fine native tree, very frequently shows to disadvantage; but the graceful-drooping habit of many of the specimens, or the regular, dense, upright form of others, with the peculiar dark green verdure common to all, certainly entitles them to an especial notice. We do not advocate its claims with a desire to see it used extensively in large masses, or even in small collections, but we do emphatically express a desire that its merits may receive a more practical notice than it has in the past.

The Juniper family contains many species and beautiful varieties that are quite hardy, but they are generally shrubs. Among the finest are the *Common Juniper*, (J. communis), and its valuable varieties, the *Irish* and *Swedish;* the curious little *Hedge-hog Juniper*, (J. echinoformis, or rather hemisphærica), as well as the several trailing plants, *J. sabina*, *J. squamata*, *J. prostrata*, &c.

As the love for evergreen trees increases, and our arboriculturists desire to extend their lists, several species will be found valuable that cannot be termed "well-tested" at present. As exceedingly promising, I desire to recommend to notice the charming *Cupressus Lawsoniana*, and *C. Nootkaensis*, *Libocedrus decurrens*, *Podocarpus Japonica*, *Taxus adpressa*, *T. baccata var. Canadensis*, *Torreya taxifolia*, *Thuiopsis dolabrata*, the *Retinispora* family, with other new and rare trees that are of great promise to the American horticulturist.

Thus, in a somewhat hasty manner, I have enumerated those conifers which in the past have proven to be the most desirable for ornamental planting, and merely allowed myself the pleasure of naming a few that are very promising and which doubtless will take a high rank in the future as available hardy trees. Had I a mission here to perform in a horticultural way, I should feel it to be an imperative duty, plainly to advise my associates of the great advantages to be derived—not to say the real necessities of the case, which lend a charm to the pursuit in which we, as a society, are engaged. Bearing in mind the old yet truthful adage of "*anything what is worth doing at all, is worth doing well*," and which points plainly to the fact, that in all our walks through life, there is a system needed to perfect the object that we have in view: and in the delightful study of horticultural science, the system arranged by Linnæus, and improved by his followers, appears so necessary to enable us to enjoy our studies, that it has frequently been a source of surprise on the part of the writer, why more attention has not been devoted to the subject.

The true botanist loves every tree and plant that grows. In his sight the gnarled trunk and scanty leaves forms not a cause for condemnation; but looking over imperfections such as these, he sees alone their higher sphere of usefulness. He searches out the ties that bind each tree unto its kindred growth, and exemplifies the wonders of the floral world by showing us the changes that constantly occur, from the bursting of the tiny seed, unto the perfect tree itself. His daily walks are cheered by old associations formed in many a year long past—impressions that will gather strength as years advance—exerting over all his actions as he journeys on, a never ceasing influence for good, a never failing source of pleasure in the green old age of life.

YELLOW FLOWERS.

BY WALTER ELDER.

In Flora's own declaration, a partiality is shown for shades of the yellow, but the Landscape and Garden, the Parterre and Bower would look murkey and dull without sunshiny yellow. From earlier than spring till later than autumn successions are kept up by cultivation and wild growth with blossoms of yellow. We get odors the sweetest and effluvias the most loathsome—whole plants to eat, and fruits for a relish—foliage for shade, and timbers to build with, from blossoms of yellow. Creepers and climbers, bushes and trees of annuals, biennials and perennials yield blossoms of yellow. The first flowers we grew in a three-foot square bed were Crocus, Narcissus and Tulips of yellow. The first wild-flowers we gathered in our boy-spring rambles were from Cowslips, Primroses and Wallflowers, all fragrant and yellow. The Whins on the knolls, and Brooms on the plains were radiant with beauty when we picked their bright blossoms to dye *Easter eggs* yellow. Barberry bushes and trees of Laburnum cheered the darkness of woods with clear blossoms of yellow. Lime trees by the wayside, (from whose shoots we made whistles), made the air odoriferous with florets of yellow. Large fields of Turnips and acres of Cabbage before they bear seeds had pale blossoms of yellow Wild mustard grew up among the oats on the farms and made the fields yellow; and in Glass-houses in spring Acacias, Calceolarias and Mimulus with the fragrant old Musk plant shone splendid with yellow. In the the spring of 1834, we arrived in America, the grass-fields were refulgent with blossoms bright yellow of Dandelion and Ranunculus, followed by Antirrhnum and St. John's-wort, Digitalis and Mullien all crowned with yellow. Azaleas in the woods were also in bloom, and most of them yellow. But the Tulip-trees tall, surpassed in magnificence all the plants we had seen to bear blooms of yellow. And the Golden-rod marshes of the State of New Jersey, (in September), outstripped in their expanses all our previous conceptions about blooms of yellow; the thousands of acres were oceans of gold, with blossoms rich yellow.

The following genera have each one or more species or varieties that bear blooms of yellow. So in purchasing them, after naming the genus, say for outdoor growth, *the hardy yellow*, for example, the hardy yellow Jasmine is different from all others, it begins to bloom in February, and the late Chrysanthemum blooms till Christmas. *Bulbs*, Crocus, Crown Imperial, Narcissus, Tigrida, Tulip. *Tuberous rooted* plants, Dahlia, Hemerocallis, Iris. *Perennial Herbaceous* plants, Golden-rod, Lysimachia, Potentilla, Rudbeckia, Sunflower, Alyssum saxatilis. *Biennials*, Antirrhinum, Hollyhock, Wallflower. *Annuals*, Calliopsis, Eschcholtzia, Cockscomb, Marigold, Lupin, Marvel of Peru, Hawkweed. *Annual Climbers*, Balsam Pearvine, Thunbergia, Nasturtium. *Exotic, tender bedding plants*, Calceolaria, Mimulus, Pansy, Sanvitalia, Gazania, Schizanthus, Cockscomb. *Shrubs*, Barberry, English Laburnum, Forsythia, Kerria, Hypericum, Mahonia, Dirca, Potentilla fruticosa. *Hardy ligneous climbers*, Bignonia, Honeysuckle, Jasminum. *Trees*, Locust, Linden Tulip-tree, Kolreuteria, Buddleya, Scotch Laburnum. For Rockworks, Sedum aurea, Lysimachia, Gazania, dwarf Hypericum. *Glass House Exotics*, Acacia, Calceolaria, Coroniella, Genista, Jasminum, Lantana, Allamanda, Tocoma, Aphelandra, Calistylos. Every department of ornamental gardening should be enlivened with blossoms of yellow, and there are an abundance of plants to suit all.

There is but one hardy standard yellow rose, the Harrison; but no Camellias nor Peonias. If any one could produce an ever-blooming Rose with blooms as large, double and well formed as some of the yellow Dahlia blooms, and sweet scented and profuse in bloom, millions of dollars would be spent for its purchase, and the same with Camellia and Peonia.

WHOLE OR CUT SEED POTATOES.

BY PLOWMAN, BALTIMORE, MD.

Being pretty well through with storing root crops, &c., and having a short time to spare, I give you a little experiment on a few Potatoes, (called the Quaker), which were presented to me by some Philadelphian unknown to me. They were large size and similar to the Harison in quality, and form

No. 1 Potato weighing 12 oz., cut in 1 and 2 eyes, produced 6 pounds.

No. 2 Potato cut in halves, weighing 12 oz., produced 5¾ pounds.
No. 3 A whole potato weighing 9 ounces, produced 3½ pounds.
No. 4 The sprouts of one Potato weighing 8 oz., produced 1 ℔. 2 oz.
Width apart, No. 1, 10 inches ; No. 2, 18 inches ; No. 3, 24 inches ; No. 4, 8 inches.

They were planted in meadow land and had a very wet season to contend with, otherwise I think the product would have been greater.

My object of trying the experiment was to ascertain if planting whole potatoes, (as has been recommended), possessed any advantage over the old plan of cutting the potatoes in small pieces. If my exhibit is worth any thing, it certainly shows that the old plan is best, saying nothing of the importance of economizing seed.

CULTIVATION OF THE PEAR.

BY JOHN M. IVES, SALEM, MASS.

I have ventured to send you an *extract* from a Lecture which I read at the "North Reading Farmers' Club," on the cultivation of the Pear ; if there should be any part of it worthy of notice you can select it for the *Gardener's Monthly.*

[PEAR TREES.

This tree is considered to be naturally longer lived and more durable than the Apple, notwithstanding this, most of our newly introduced fruits show symptoms of decay, while on the contrary, many of the old varieties which are scattered around the country are still in a bearing and healthy state, such as the Old French Trees that line the river Detroit. Now it becomes of the highest importance to ascertain, if possible, the causes of this premature decay, for of the million Pear Trees planted for the last 25 or 30 years, not one half are now living upon our soil. The old varieties alluded to, as far as we know them, are probably found growing upon the spot where they have either sprung from seed, or were transplanted with their tap-roots uninjured, for we are inclined to believe that an injury to any one part of a plant or tree occasions a change in the natural development of the other parts. Roots and stems are always in a certain degree reciprocally proportionate to each other, the tap-root does not form a part of every plant, but when it does so, it is an essential part of that plant. Our cultivators at the present day invariably cut off this tap-root, and generally the laterals or side shoots from the stem in order that lateral roots may multiply and the trees grow faster, and to appearances more vigorously, as they may for a time, but not as we apprehend permanently. In nature there is an equilibrium between the roots and tops of all trees, and by cutting off the tap-root we interfere with its healthy action, by producing a forced growth and a sort of plethora which may tend to produce disease, although at first it may hasten its bearing. A recent writer says, "that it is not to be supposed that trees form tap-roots to their own prejudice, these roots descend into the earth for some special service, tap-roots are undoubtedly essential to the healthy growth and *durability* of the tree." Another cause which may operate for this decay may be from the method pursued by Van Mons in the production of those introduced by him, the leading feature of whose theory was to *subdue* or *enfeeble* the original coarse luxuriousness of the tree by gathering his fruit from which he took his seed *before* being fully ripe, allowing the fruit to rot ; from the seedlings thus produced he cut off the tap-roots, planting the trees very near together. He said "that this enfeebling process is without any compensating element of vigor."

Professor Darby thinks that "if the seed for stock were planted where the trees were to grow, and grafted or budded in their natural positions, we should have fruit orchards for a generation." The healthiest Pear Trees we have seen, were upon the farm of General Newhall, of Lynnfield, these were grown from seed sown ten years since, they were remarkably thrifty, two or three were in flower, these trees stood where they came up from seed, they had never been pruned in root or side branches, these side branches clothed with leaves protecting the trunk from the scorching rays of an August sun. We apprehend that this cutting off the tap-root and pruning the side limbs of our trees, *when young*, to be a bad practice, we should allow them to grow as nature indicates, thereby increasing the ratio of the surface for the descending sap, as compared with the ascending. It has been justly said that the effect of pruning the trunks of young trees severely disturbs the natural relations of the sap. Pear Trees with us, particularly when young, are subject to a dessication of the bark, which is probably caused by the too powerful rays of a burning sun occuring immediately after a shower striking the naked trunks still wet ; one proof of this, is the fact that we find these appearances generally on the south side of the stem, more

especially on the south-west side, or towards the 2 o'clock sun. From this we infer that nature intends the side branches with their leaves to protect the tender bark of our young Pear trees.

The Pear Tree requires a retentive soil in order to give good returns, but not when water stands under the surface or sub-soil, for if the roots of any Fruit Tree enter or remain in it, such roots will decay, and a corresponding decay, sometimes called Canker, will be seen commencing in the top limbs, this effect we have noticed for years. The following came to us a few years since from the West, the writer says, "that the loss of fruit trees within three years in Illinois is estimated at about three millions of dollars, and that the retentive clay loam sub-soil of the prairie lands is the cause, and that the farmers have adopted the plan of ridging their orchards by repeated ploughings, commencing at the same ridge and ending at the same furrow, to remedy this evil." We do not apprehend that this is simply owing to their clayey sub-soil, provided it does not retain water, for here in New England we find that Pear trees flourish better on land with a sub-soil or pan of clay, by preventing the roots from running deep, the difficulty with them is undoubtedly owing to the adhesiveness or peculiar quality of their clay, which prevents the percolation of water through it. Such land requires a good system of draining. On the quality of the sub-soil depends in a great measure the capacity of the surface soil for retaining or parting with the water and heat ; of these the worst is clay kept wet with subterraneous water, so destructive to fruit trees, and the best are those of clay resting on gravel or porous rock ; this last is the best for a garden, because while the water finds a ready means of escape, the roots of the trees are prvented from extending too deep into a cold and uncongenial soil, such is probably much of the prairie lands in the West.

There is no fruit tree varying more in its culture upon different soils and in its growth, than the Pear, each variety we may almost say has a peculiarity in its growth or fruit, hence while the Bartlet will assimilate to itself materials for an abundant crop in almost all good soil, the Beurre d'Aremberg, Diel, Wilkinson, Lewis and some others require a strong or rather moist soil to produce well developed fruit. There are those which bear the largest and best fruit upon young trees, for example, the Flemish Beauty, while the Glout Morceau requires years of bearing to develope fine specimens. Others should be worked on our larger standards, such are the Seckel, Lawrence and Winter Nelis.

The Duchesse d'Angouleme fruits better on the Quince ; but as regard Dwarf Pears we should not recommend them for general cultivation--these belong to the garden of the amateur, rather than to the orchardist who desires to have large crops and durable trees, thereupon the Quince requires more care ; the season of 1853 was disastrous to Dwarf Pears in Massachusetts, hence for permancy we would commend only the Pear stock.

The peculiarities of soil required for some varieties were strongly exemplified on Long Island. Two cultivators living within 20 miles of each other, their land exposed to the sea with similar aspect, differed entirely in their opinion of the Napoleon Pear, one testifying that with him it was an abundant bearer, and the quality of the fruit unsurpassed ; the other said that with him the fruit was of a poor quality and the tree a shy bearer. From our experience with the Napoleon we have found it poor and astringent when grown upon a warm open soil, while upon a strong and rather cool soil to be very good. This diversity of soil and culture necessary in the culture of the pear should influence us in forming a list. Many pears produce fine fruit on a warm loamy soil, such as the Belle Lucrative and Bloodgood. Some varieties which do well in the sheltered gardens of our cities and towns, do not flourish in the open country, such as the Easter Beurre, Long Green and Gansel's Bergamotte.

P. S.—I would forward you the remarks upon the *Blight*. The insect theory of Dr. Peck, made some thirty years since, of what he called Scolytus pyri—we now hear nothing. The Frozen Sap blight from succulent unripe wood, and the Sun Scald are the two descriptions of Blight.

When Dr. Peck described this, the cultivators did not believe that was the difficulty, but that high manuring was. I have the testimony of many cultivators of that time, and I find them all sceptical on this Scolytus Theory.

[This theory is entirely abandoned.—ED.]

KEEPING PLANTS IN WINTER.

BY R. R., NEAR CHATTANOOGA. TENN.

People of moderate means are often advised to use a cold pit. My advice is to have nothing to do with one, for they are a perfect nuisance ; you can often keep plants nearly all winter in them, and at last a severe spell comes on and cuts them off. Allow me to describe a structure that I have built and can confidently recommend to give satisfaction to any one who does not wish to go to the expense of a greenhouse, and still wishes to keep plants through winter. Twenty feet long, twelve feet wide, I use plank two inches thick and fourteen wide for the sides, fasten them to posts, which are put on the inside, then dig out the soil one foot deep, which will do to bank up on the outside, then dig holes in the centre to support the the ridge board and in front of the posts dig out the pathway as deep as you want it, (my structure runs east and west) on the southside I run a flue with a furnace four feet long and two feet wide for burning wood,—the flue is made by placing two bricks flat down first, then two on their edges and one across; and here let me remark, that people make a great mistake in making their furnaces too small, no matter how small the structure, they ought to have a good large furnace so that there can be plenty of fuel put on to keep in without any draft on. The next operation is to put on the rafters and plank up the ends and make the door, the south side is glass and the north is inch plank.

I have a propagating bed over the furnace nine feet long by four wide. During the winter the sun shines through to the back, but even if it did not, there are so many uses that it can be put to, such as keeping pots, stakes, dormant plants, Begonias, Ferns, &c., so that no space is lost. The plank can be covered with soil, straw, or anything convenient in winter, and the glass covered with shutters so that very little fire will be needed.

Will you please give my structure a name, for it is neither pit or greenhouse, but something between the two. There are a great many lovers of flowers that are deterred from buying choice plants, for they are sure to lose them in winter, when by having a cheap structure, such as I describe, they can keep the very choicest and rarest plants in perfection instead of keeping only a few of the very hardiest bedding plants, which they had better buy in spring than try to keep at all.

[We call pits without fire "cold" pits; for distinction, suppose we call our friend's structure a warm pit.—Ed.]

THE TOMATO, ORIGIN,—&c.

BY ROBT. SINCLAIR, BALTIMORE, MD.

I wrote you a short communication last fall on the subject of the Tomato, which you kindly published in your Nov. number of '66. Since then there have been various opinions on the same subject. Jas. Perkins communication (published Nov. No. '67) appears to throw more light on the subject than his predecessors. Mr. Perkins, however, does not give the date when he seeded in February, neither does he give the comparative product and character of the fruit. It may be, the "New York Reds" and "Monumental" compare favorably. The latter was described by me in the Nov. No. of '66. But to be more definite it may be called, instead of Monumental, Early Smooth round apple prolific or Baltimore market.

The result of my experiment last season was as follows:

Seeds sown in Hot beds March 10, '67,
May 20th dibbled the Tilden Tomatoes in hill, 4 by 4, ripe 3d of August.
May 21st, dibbled Monumental, ripe 20th of July.
May 28th, " English's N. Y. Seedling, ripe 5th of August.

It will be seen that in the fall of '66 I averaged the product of C. favorite and the Tilden at 35 each. The seed was obtained from a respectable source, but of doubtful purity; at the same time I averaged the product of the Monumental at 120. By the word ripe, I mean sufficiently so to commence gathering daily from a quarter acre lot a large family supply. The Tilden Tomato now described was grown from seed obtained direct from Mr. Tilden, product averaged 60 per vine, a handsome dark red, smooth variety, ripened 13 days later than the Monumental, less *endurance* by several weeks and worthless as regards early market sales. English's Seedling turned out well as regards the medium and small sizes, the largest were deeply ribbed and knotted—in short monstrosities. Time of ripening, one week earlier than the Tilden.

I noticed the Fejee last summer on a farm adjoining mine—they resembledt he Tilden, the color not so dark; the owner said they were about one week later than the Monumental, and unproductive. Last season was very unfavorable to the Tomato and other crops requiring heat. With us the weather was exceedingly wet and cold. Our gardeners sell their first crop of Tomatoes, at about $8 per bushel, the price gradually declining to 40 cents. The canning Merchants generally purchase at the latter price, which will pay provided the plants are productive sorts. The three sorts of Tomatoes I have named were planted in hills on a dark gravelly loam, rather a cool and damp exposure manured with horse-stable compost and all cultivated alike. Now taking

into consideration the early period that Mr. Perkins planted, the soil and situation, which he describes as favorable to an early crop and the very few first ripe fruit gathered, leads me to infer that the Monumental under like circumstances, will ripen about one week earlier than the New York Reds. As regards solidity, I believe locality, soil and the kind of manure applied is the secret of success. In this, Baltimore Co., horse-stable compost is preferred; in Anne Arundel Co., (only separated by a wide river), guano is extensively used. Our canning Merchants say they pay 40 cents per bushel for Baltimore Co. Tomatoes and 35 cents for those from Anne Arundel Co., because of superior solidity of the former. I have no object in writing this communication other than, to establish facts and to benefit the planter. I suggest that several of the most noted Early productive sorts be collected and tested by some reliable farmer and gardener, who grows the Tomato exclusively for market sales. I would include Seed Venders and growers, from the fact that the latter are less interested than the former in the result.

The New Jersey lands I suppose are eminently favorable for the growth of the Tomato, and if Mr. Perkins comes under the rule, that I have or may be prescribed, I would nominate him to undertake the task.

If your subscribers wish a packet of my seed, (To quote part of a pithy "scrap" on page 340 of the Nov. number.) "Price $10 per packet of ten Seeds."

ORIGIN.

The probable origin of the Monumental Tomato is the City of Baltimore. I recollect that the late Jefferson White of the Shaker Society, at Enfield, Conn., wrote me upwards of 30 years since for a barrel of what he termed the Baltimore Tomato. The barrel was sent him and he being at that time an extensive garden seed vender it is probably he distributed the seed to his customers, and it may be all those so-called new sorts sprang from that source.

The Tomato I have described is called by our gardeners, Large Red, (so-called for the sake of brevity I suppose, or because their forefathers called it so). It is one of the latest Tomatoes grown, and only tolerable as regards qualities and product, consequently comparatively worthless. I have noticed them in our market house stalls for many years, all our most careful gardeners have them in the highest purity.

CANNON HALL GRAFTED.

A. LEDERHOFER, BRIGHTON, N. Y.

I feel indeed most happy to reply to the Correspondent of the *Gardeners' Magazine*, in regard to Grafting Muscat Cannon Hall. In England where I was I had Cannon Hall grafted on Black Barbarossa, and succeeded very well on a six year old vine; the bunches, 14 in all, have been from 1 ℔. to 2¼, bearing all together 27℔. 11 ounces.

Muscat Hamburg grafted on Babarossa two years, the stock was seven years old. I had three bunches well ripened and splendidly colored, weighing above 2 lbs. each, together, 7 lbs. 5½ ounces. All our Vines have been worked on Barbarossa; they who know Barbarossa will approve it for a stock. Then last summer, in Canada, I had Muscat Cannon Hall grafted on Champion Hamburg doing very well; but all I have seen had them on their own roots far superior to the grafted ones, if not the size larger, they were sweeter, and heavier. My opinion is that very few gentlemen thoroughly understand the culture of Muscat, and if the Editor would give me some space in some of he next numbers, I should willingly give my experience; I believe I can give nothing new, but may give strangers some better idea of growing Muscats.

CRYSYLIC ACID FOR INSECTS.

BY T. A., WASHINGTON, TEXAS.

So, you think it doubtful if a sprinkling with Crysylic Acid, as suggested, would greatly disturb that little pest, the Curculio.

Well, perhaps not. That hard shell back of his is a capital protection; and one cannot reach him, or *her*, I should rather say, as the scale can be operated upon, with a brush.

Still, you will find on experiment, that the discovery of that, and its kindred acid Carbolic, will prove a prodigious boon to the Horticulturist and the Farmer as well.

To every insect upon which I have tried it, and I have experimented more or less during all of the past summer in Texas, where we have several, it proved to be either instant death, or so utterly obnoxious and dangerous to them, that they anxiously avoided all contact, or even near approach.

You are aware that there is a group of acids, so called, that chemists say they are not really acids, including Carbolic, Crysylic and some others. That till recently they were known as one, Carbolic, now they are separated and formed to number several. The two named are found to have a similar effect upon insect and fungus life ; and are at the same time the most powerful known disinfectants and antiseptics. The Crysylic being the most so, and does not give off the very obnoxious smell which the other does.

I found them so highly valued in England, that I was led to buy them here. They form the active principle in sheep-dips in scab, &c., in ointments ; for foot-rot in Saint-vore, in powders for preventing turnip fly, &c., and in all disinfectants.

I do not deem it so necessary to find a means of *destroying* plant-eating and fruit penetrating insects, as to be enabled to *bluff them off.*

You are aware that the cotton worm played havoc with that crop this summer. More than the usual degree of attention was directed to the insect ; and many a new comer made discoveries, real *mare's nests*, with which they were going to astonish the world, and especially those ignorant old-fogy cotton-planters. But they did'nt do it ! the worm went on as usual and ate up the crop.

The fact is, if the most of us *know anything*, it is cotton, and all connected with it. Every suggestible means has been tried to destroy the *varmints* ; but all would not do. Because if one or two careless, or indifferent, or unbelieving planters in a parish were negligent, their fields afforded a stock of moths sufficient to supply the whole country.

What we wanted all along, was some means of *rendering the plant obnoxious to the parent moth.* This, and this alone, would serve any good purpose.

I suggested Carbolic and Crysylic acids, and the crude astiale containing froth was pretty freely tried, and with the same invariable result.

Neither of those acids will combine with water, and can *only* be *mixed mechanically*, hence when so mixed and sprinkled over the plants, the water ran off from the leaves leaving the acid behind, which clung to them, blistering and destroying them, and soon "wasted the sweetness," &c. Every caterpillar, however, that was touched by it died.

I provided myself with a soapy compound, a solution of which had a very different effect. It spread freely over the leaves, coating and clinging to them without any injury whatever. And although it did not destroy those worms already on the plants, not another egg was deposited.

Now, mind you, this was a first experiment, carried out with insufficient means, a limited supply of the material, and no way of applying it but with a common watering pot with a rose.

A stronger solution applied forcibly through a strong syringe, would have produced a very different effect.

I am fully satisfied that a saponaceous compound, applied in solution, is the only safe and sure mode of using these acids on plants. And a saturated sawdust strewn over seedbeds or mixed with the manure, the way to reach the little pryers upon young seedlings, or those which attack the roots. In this form the acid is parted with slowly, and is thus more lasting in its effects.

If the constant use of a very weak solution in syringing plants in the house will prevent the attacks of the red spider, aphis, &c., &c., it will serve even a better purpose than to have them to destroy. And so with the Canker-worm, the Curculio, Rose-bug, Squash-bug, &c., &c. Better keep them off than have to kill them.

If shade trees, now subject to the ravages of caterpillars in cities, were syringed over the young foliage before, or about the time of the appearance of the parent moth, there would be no worms.

There, I think you and your readers have enough for this time on which to base thought and experiment. I close, expressing the hope that experiments will be tried, and the results reported.

ECONOMICAL GARDEN MANAGEMENT.

BY GEO. THOMPSON, CLEVELAND TENN.

As you considered my first article on economical management of gardens worthy of publication, I now give No. 2, and shall confine myself to the vegetable garden. Most of the private vegetable gardens that I have seen are laid out on the European plan, small squares, planted with fruit trees, gooseberries and currants next the walks, and the rest devoted to vegetables. Any garden laid out in that style of any extent, either requires a great deal of help, or else it is overrun with weeds all summer. A vegetable garden of two or three acres ought to be laid out so that plough and cart can be used in every part of it. A permanent road through the centre is sufficient.

As soon as the ground is dry in spring, I plough as deep as possible, and if manure is scarce I use it in the rows ; if plenty, spread it on the ground

before ploughing. Onions, parsnips, carrots, beets and herbs, are best planted by themselves as they have to be kept clean by the hoe. Potatoes, corn, okra, peas and beans and other large vegetables, plant from three to four feet apart so that I can use the bull tongue plough constantly. Many of your reader may not know what a bull-tongue plough is. It is like a common plough, only instead of a shear, it has a piece of iron about a foot long and four inches wide, in shape of a bull's tongue fastened to it, and although so simple, it is the most effectual garden or farm implement in existence, and if nurserymen would use it instead of the cultivator, they would very often be able to bud in fall during a drought by reason of the deeper cultivation keeping the moisture. It is a mistake to think that the same rules will do for the private garden,—the market garden require peas that ripen all at the same time—the private gardener wants to pick a peck a day from the same row for one or two weeks. The same with every thing else.

Ask a private gardener his opinion of a certain strawberry, raspberry or blackberry, and he will tell you it is the best in existence, he was able to pick half a gallon a day for weeks. The market man will tell you they are not worth growing, he was not able to pick enough to pay him. The same holds good in vegetables.

Most gardeners appear to be afraid to plant too much seed of peas. I like to plant a gallon at a time, as soon as the best of them are picked, plow the ground for a crop of something else—corn, beans, cabbage or celery. Corn I keep planting in succession every ten days until the second week in July. Beans until the last of July, and what is not used for the table will do to pickle, besides saving seed. After that I begin to sow turnips and by that means keep the ground clean.

The great mistake of American private gardeners is they want to sell something to help to pay expenses, and in nine cases out of ten it is a failure, for the reason that the two branches of gardening are so different, that the place is almost sure to go down in consequence. I once lived with a gentleman who thought he could make something by selling the pears he did not want himself. One day we picked the pears and put them in barrels, at night I asked him if he would send them in his own wagon or would some one come out for them ; he replied, I have inquired the price to day, and no one will give anything much, as the fruit is of so perishable nature ; put them in the fruit room. I believe that was his last attemptto make anything from his garden. I once knew a gentleman who had a fine greenhouse, he thought he would like to sell bouquets in winter to make it help pay expenses. The result was that it was never fit to be seen. When any one called, the gardener always would apologize by saying, "I had a large bouquet to make this morning,—took all my flowers."

Gardeners are to blame for this state of affairs, if they would say, I will do with as little help as possible, but do not try to sell anything for there is no profit in it ; but instead of that they often advise employers to sell.

EARLY TOMATOES.

BY MR. P. HENDERSON, SOUTH BERGEN, N. J.

Is is not of much moment for the amateur cultivators whether a fruit or vegetable is early or not, in nine cases out of ten he is not able to judge, or has nothing to compare with to help his judgment, and is generally in ecstasies when he manages to have anything grow and mature at all. but to the market gardener, who perhaps, embarks all his capital in the venture, it is of the utmost importance to know what are the best varieties for his purpose. Generally simple-minded and unsophisticated men, they believe well of their fellows, and give ready credence to the most extravagant statements of the earliness and productiveness, until woke up to the stern fact that they have been deceived.

In our opinion hundreds have been so deluded by the Tilden Tomato, represented to be two weeks earlier than any other, while all comparison shows that it is one of the latest of the late, with hardly a quality that entitles it to cultivation. The experience so clearly given by Mr. Perkins in the November No., is that of scores, who would without hesitation endorse every word of his statement.

When Mr. Hovey wished to prove his rather hard-to-swallow assertion, that the "Keye's is 30 days earlier," he shrewdly picks out the Tilded as the latest he could find to show how wide the gap is.

SOUTHERN PEACHES.

BY J. A. NELSON, INDIAN RUN, MERCER CO. PA.

We have had a large crop of peaches the present season, although the Locust last season injured our trees considerably and the late backward spring affected the crop some, so that the fruit was not as good as might have been, and was several days later ripening than usual. We have a large collection of fine southern varieties, that are not described in our Fruit books, nor much known in the north. Our oldest trees are ten years old, and originated in the State of Georgia, and we have no handsomer trees on all our experimental grounds, which comprise some 120 or more varieties, which leads us to believe that most of them will withstand our winters as well as some of our northern varieties. The most difference is that the fruit may not grow as large north and be some days later in ripening, and the late ripening varieties don't suit here.

The Tecumseh and Lady Parham we have discarded from our grounds, and the Hull's Athenian, and some others we shall treat in the same manner. We shall now notice a few varieties, time of ripening, &c., in '67.

Canary. This peach has ripened in former seasons from 12th to 15th of August, this season was near the 20th, in ordinary seasons they will all ripen some ten days earlier than here stated. Good bearer, fruit medium, oblong; beautiful, bright yellow color; freestone. Ripe 20th of August.

O'Gwinne. Cling, good bearer; large, oblong; white, covered with crimson, 15th of Sept.

Hopkinsville. Cling; good bearer; large greenish white and dull red, 15th of Sept.

Exquisite. Rather a shy bearer; fruit quite large, resembles very much the Pace or Tinsly Peach, freestone, 20th of Sept.

Golden Ball. Shy bearer, very large; golden yellow, freestone, ripe 15th of Sept.

Leopold Cling. Medium bearer; fruit beautiful, very large, yellow tinged with red; delicious, 20th of Sept.

Pace or Tinsley. This peach grows very large in the south; medium bearer; large, singularly striped and veined with dark red, on yellowish ground; good quality, freestone, last of Sept.

Ripley Cling. Good bearer; large, white, highly recommended, last Sept.

Logan Cling. Good bearer; medium, fine deep yellow, 1st Oct.

Bagby's Large Cling. Large, oblong; white, 1st of Oct.

White Globe Cling. Large; white, rarely tinged with little red, 1st of Oct.

Grand Admirable Cling. Good bearer, very large; white, beautiful red cheek, 10th of Oct.

Demming September Cling. Good bearer, large, yellow mixed with red, 20th Oct.

Eaton's Golden Cling. Medium, fine yellow, 20th of Oct.

Hull's Anthenian Cling. Large; yellowish white with dull red, 20th of Nov., too late to ripen at the north.

Owen's Seedling. Good bearer; medium, fine, white, freestone, 25th of Sept.

White's Favorite. Good bearer; medium, fine yellow, freestone, 10th of Oct.

In getting the above varieties, some few gave no description of fruit, only as highly recommended, they may not be true to name. The above varieties have all fruited on our grounds for two seasons or more.

We have four varieties of the Blood Peach, rather a peculiar fruit of no value for eating, flesh very red like that of a beet, esteemed by many for pickling and preserving.

Blood Freestone. Medium, dark purplish red. 15th of Sept.

Indian Blood Cling. Large, dark purple red, 15th of Sept.

Blood Clingstone. Very large, oval; dark purplish red, last of Sept.

Kansas Seedling Cling. Originated on our ground. Similar to the Blood Cling, only a few days later in ripening.

Yellow Rareripe. Freestone, originated on our grounds. Great bearer; medium, orange yellow, rich red cheeks; rich, sweet and delicious, 20th of August; will bear a fair crop in seasons when nearly every other variety fails.

We have neither peach seeds, nor trees for sale at present. We saved no seeds, but a few for our own planting and owing to the late severe winters and the locusts last season, we have nearly lost all our stock of young budded trees.

Grafting the peach is considered rather a difficult matter. We have succeeded in getting from one half to two-thirds to grow. I will here give my mode of grafting. Cut and manage the scions, the same way as the apple: early in the spring as soon as the ground thaws enough, say in the month of March, take up the seedling stocks. Splice and tongue graft the stock at the crown of the root, bind them firmly together with a waxed cloth or woolen yarn, then transplant out again leaving the top bud of the graft merely above ground; after growing one season take up and transplant to where you wish them to remain. The only difficulty is in early grafting, the ground freezing afterwards and forcing out the graft, to prevent this, cover the top of the graft with earth several inches, so the frost don't reach it. As soon

as danger of freezing is over, remove it, or tie the graft firmly to the stock with woolen yarn. After the graft has grown some, remove the earth and cut the tying loose, to prevent injuring its growth.

THE "GENUINE" TILDEN TOMATO.

BY P. HENDERSON.

In the June number of the *Monthly* for last year, Mr. Tilden alludes to the seed firm of which I am a member, insinuating that what we sent out as Tilden Tomato, was not that variety but some other.

The facts of the matter are simply these: in December of 1865, we purchased *one hundred* papers of the Tilden Tomato from Mr. Gregory, of Marblehead, Mass., all of which we did not sell. That the variety received from Mr. Gregory, as Tilden, was genuine, I have not the shadow of a doubt; and it was from this lot that the plants were raised that I used in testing its quality against the other sorts. The result of that test, which I took the liberty to give in my recent work on vegetables, has caused him to make statements in the article alluded to, which if left uncontradicted might injure our reputation. In the article alluded to, he says that "The firm of Henderson & Fleming advertised the seed *extensively* last year, and as far as I am able to judge, the article they sold bore no resemblance whatever to my Tomato." If Mr. Tilden will show me where we advertised his Tomato either "specially" or "extensively," then I will admit all he says; but if he cannot do so, then it will only be fair to infer that if he is reckless in this statement, he is more than likely to be "mistaken" in saying that the article we sold bore no resemblance to his Tomato.

In our Seed Catalogue for 1866, we notice the Tilden Tomato in the following paragraph, which we clip from its pages:

"Tilden Tomato.—*Said to be two* weeks earlier than any other variety; color, brilliant scarlet; shape, roundish oval; free from wrinkles or excrescences. In packets, 25 cts. each."

Now it will be seen that our "*Said* to be" pretty clearly indicated our opinion of the Tomato even in advance of trial; with such a doubtful endorsement it was very unlikely that it would be much called for by our customers, and hence the very small number of packages sold.

Mr. Tilden says that within a few weeks he has received not far from a *thousand* letters of complaint, and by far the greater portion of these mention as having purchased their seed from Henderson & Fleming, of New York. We have no doubt at all of his having received letters of complaint, but I must be allowed to say that he is again mistaken when he asserts the "greater portion" of a *thousand* complaints were made by purchasers of less than a *hundred* in number.

Our experience as Seedsmen has not been long, but it has been pretty extensive, and it clearly shows that wherever an article does not come up to the expectation of the purchaser that the blame comes on the shoulders of the seedsman direct If I purchase Landreth's Extra Early Peas, and by mistake, or otherwise, sell Champion of England instead, would the purchaser pitch into Mr. Landreth? I think not. It is, therefore, hard for us to understand how the "greater portion of a thousand" victims to this Tomato swindle, as Mr. Tilden deems it, should strike at Mr. Tilden over our heads; and with what wonderful instinct they knew his address in far-off Iowa.

We are always doubtful of the merits of new Horticultural products when sent out by those who have no previous professional reputation, and when this Tomato was sent out, as it was, instead of making a special advertisement of it as many other seedsmen did, we contented ourselves by giving it such a notice in our Catalogue as to show to our customers that we had better faith in its claims, and as a consequence our sale of the seed was not such as to overwhelm Mr. Tilden with complaints from those buying it from our Establishment.

My reason for not replying to Mr. Tilden sooner, is, that desiring still further to test his Tomatoes another season, and having received a packet of seed of the "purest genuine" from a great admirer of the Tilden, near Philadelphia, who was so careful of it that he saved only four ounces of seed from an acre, I entered it in the lists with four other varieties. As it developed it showed the distinct features of our Tilden of 1866, both in foliage and fruit, which satisfied me that what we had had from Mr. Gregory was correct. But the result of this test still further confirmed me in the opinion which I gave of it in "Gardening for Profit," that it should never have been sent out.

EDITORIAL.

FIRES.

This is the season when greenhouses burn down. We have frequently cautioned our readers against having *wood* near flues, and have explained how wood will take fire, *in time*, a long way off without actual *contact* with flame. Yet we see about us continually the wood work of greenhouses so arranged, that after a few years they must burn down. A very common thing is to use wooden chimneys at the end of a flue. We saw such an one the past month take fire from a furnace which was *fifty feet* away. It had been only two years in use. We also saw in our neighborhood lately the large Orphan Asylum, built at a cost of 100,000 dollars, within half an hour, perhaps of burning down, by the lath and studding of a partition wall taking fire from a common cooking stove several feet away.

Our readers should take warning by these facts, and keep all combustible substances a long way from flues.

NOTES OF WESTERN TRAVEL.

Columbus has not much in the way of private gardening, yet there are a few matters of much interest. Dr. Carter has particularly a very pretty spot. His grounds are not large, but, attached to his dwelling he has a glass structure, comprising probably 1500 square feet. The plants are for the most part grown in the open ground enclosed by the conservatory, which is heated by hot water pipes, so as to be able to maintain a temperature of 80° if desirable. The absence of pot culture, renders very little care necessary, and the Doctor is able to attend to every thing himself. A very little time suffices. Here we found one of the choicest collection of rare plants in the country. Palms, bananas, tree ferns, auracarias, besides foliage plants in great variety abounded. As the house is lofty, many of these reaching the glass, formed a forest of rare beauty, through which waterfalls, cascades and fountains were introduced with excellent taste.

Aquariums for fish added their charm to the collections, and rare singing birds, with their lively voices, gave a cheerfulness to the whole, rarely found in the best eastern greenhouses. A very nice plant of the West Indian Papaw, *Carica Papaya* interested us from the fact given us by Dr. Carter, that the odor or some exhalation of the plant had the power of decomposing meat. We were particularly interested in this from the fact of a friend of ours having recently discovered that the object of the Venus Fly-trap, *Dionæa muscipula*, in catching flies, is to eat them. He has found that the fly disappears very soon after being caught, and that the leaves do not open again until the insect has been not only 'taken in,' but 'done for.' The facts have been communicated to Mr. Darwin and other eminent naturalists, much to their interest; however, as he has promised to communicate it for our readers, we will not anticipate. We annex a small cut of a Papaw, made for us by our friend F. Stein, of Tipton, Ohio, which will give some idea of a plant destined as we believe to excite more attention one of these days.

We believe there is only one cold grapery in Columbus,—a very nice house—belonging to Mr. Platt. It was a very pretty structure, but the bunches were small, and plants not very healthy. Much expense had been bestowed on preparing a vine border—deep below the surface—to which we attribute the comparative failure. As there is no one to advise with, however,—being alone here—the experiment was so far encouraging; and we have no doubt, profiting by errors as they go along, will eventually result in great success.

Our Columbus friends will yet turn out fine foreign grapes. The grounds around Mr. Platt's house are arranged with much taste, and will, we have no doubt, do much to assist Mr. Hanford in his endeavors to make Columbus a credit to refined Horticulture.

An evening with our good friend Prof. Lesquereaux gives great pleasure to our recollections of Columbus. It will interest the numerous friends of this distinguished naturalist to know, that though advanced in years, he is still comparatively hale and hearty, and gives promise of many years of usefulness in the path of Science. He was purposing then to take a journey to Cambridge, to assist Prof. Gray in some labor of love. Dr. L. takes great interest in the manufacture of pure wines, from the American grape. Well acquainted with the wines of his native country, he has no doubt of the capacity of this one to make them equal to the best of the old world.

We left Columbus to spend a few days in Cincinnatti, where we saw so much to interest us that we hardly know what to leave out to make the articles short enough for our limits, but we will endeavor to give a full chapter of this City of Wine and Oil in our next.

BERBERIS DARWINI.

Too much cannot be said of this fine evergreen species. It is hardy, and the profusion of its orange-colored blossoms together with the quantity of berries which it bears (of which pheasants are very fond), render it one of the most attractive and desirable plants for lawn as well as covert planting ever introduced.

So says the London *Gardener's Chronicle*. It is not, however, quite hardy in Pennsylvania, but will be south, and anywhere would be a very beautiful thing for pot culture. It is of quite moderate growth, and as a room plant would be admirable.

BUFFALO GRASS.

We find in our letters from Western Agriculturists, and in our exchanges much attention given to this forage plant. Different writers evidently refer to two different, though closely allied things. They are not true grasses, but near the clovers. The smallest (botanically *Medicago lupulina*) has small yellow flowers, and the leaves very small, although the herbage is very profuse; the other (*Medicago sativa*) is taller and has blue flowers. At a recent meeting of the Utica Farmer's club, Hon. HARRIS LEWIS, of Schuyler, presented samples of grass found in Green Lake county, Wisconsin, which was known there under the name of Buffalo grass, and which he believed was the most valuable grass for grazing that he had ever seen. He found it growing over an area of 90 000 square miles.

It grows in tufts like orchard grass, and stock eat it greedily. When cut for hay it will give two crops in a season, of two tons to the crop. It springs up very early in the season, grows in all soils, and the second crop will grow and mature from the last of June to the 25th of August. The plough is fatal to it, and when the old pastures and meadows in which it luxuriated are broken, it is killed entirely. It stands frost well and is enduring. When designed for hay it should be cut twice. He thought to a dairy region like Herkimer, this grass would be as valuable as a gold mine, and a great deal more remunerative than an oil well. The specimens shown, of *M. Sativa* no doubt, measured seven feet in length.

SCRAPS AND QUERIES.

UNANSWERED NURSERY LETTERS.—*Mr. E. Manning, Harrisburg, Ohio*, sends us the following note. As our readers know, our rule is not to interfere in any *personal* matter whatever, no matter how apparent the reason in favor of our doing so; our idea being that people should not set aside good business rules when dealing with advertisers any more than they would with any other people; and that when they get treated badly they should apply to regular legal courts for redress. Of course, we cannot tell what the other party might have to say in his defence, and hence our columns would be open to a discussion which might rival the celebrated case of Jarndyce *vs.* Jarndyce, in length and continuance.

However, as we wish to admit no advertisers into our columns but those thoroughly reliable, if possible, we let Mr. Manning on this occasion have a hearing, he says:

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[1st. About the size of small Peas. 2d. one-fourth.]

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I have grafted the above named pear trees with Quince, hoping thus to escape the borers which destroy all our Quince trees in this part of the country. Is that a new idea? Will it not succeed?"

[We believe it is a new idea.]

Graperies.—*Mr. Linney, of Cuyahoga Falls, Summit Co., Ohio*, says: "In looking over the October *Monthly*, I see the argument is still kept up about Mr. Miller's grape, in which I have taken considerable interest, as nothing, I think, looks better to a gardener's eye, than a good house of grapes, well ripened with a good bloom on the fruit. When I came to my present situation we had no grapery, so three years ago we put a lean-to against a fence about sixty feet long, low roof, about 25 or 30 degrees, my boiler I raised above the ground, both inside and out. This year I let them fruit for the first time. Now for the result: my Black Hamburg bore eleven bunches each, averaging three to four pounds; one bunch I took to Cleveland measured 2 feet, 6 inches round, it weighed 5 pounds. The crop has not hurt the vines in the least, for they have made fine growth and splendid wood for next year's bearing, and I make no boast when I say I can do it every year with these vines. They measure round the base of the stem 8 inches and 4 at top. They were the admiration of every one who saw them. I don't write this to brag about grape-growing, neither to get it put in your *Monthly*, only to say "that there are as good fish in the sea as was ever caught."

Cerasus Borealis.—*J. R. S.* says: "This is a very pretty small tree, or large shrub, that I never saw recommended for planting; handsome shaped head, beautiful bark, good foliage; flowers as pretty as many of the Spireas, and the fruit quite ornamental."

Rogers' No. 4.—*H. W. R.* says: Growth *very* vigorous and healthy—no appearance of mildew or rot. The fruit ripened nearly as early as Delaware, and is *very* showy in size of both bunch and berry. When thoroughly ripe it is a fine fruit; the *best* (all things considered) of the six varieties of Rogers' Hybrids that I have fruited. These varieties are Nos. 1, 3, 4, 5, 15, 19.

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I have grafted the above named pear trees with Quince, hoping thus to escape the borers which destroy all our Quince trees in this part of the country. Is that a new idea? Will it not succeed?"

[We believe it is a new idea.]

Graperies.—*Mr. Linney, of Cuyahoga Falls, Summit Co., Ohio,* says: "In looking over the October *Monthly*, I see the argument is still kept up about Mr. Miller's grape, in which I have taken considerable interest, as nothing, I think, looks better to a gardener's eye, than a good house of grapes, well ripened with a good bloom on the fruit. When I came to my present situation we had no grapery, so three years ago we put a lean-to against a fence about sixty feet long, low roof, about 25 or 30 degrees, my boiler I raised above the ground, both inside and out. This year I let them fruit for the first time. Now for the result: my Black Hamburg bore eleven bunches each, averaging three to four pounds; one bunch I took to Cleveland measured 2 feet, 6 inches round, it weighed 5 pounds. The crop has not hurt the vines in the least, for they have made fine growth and splendid wood for next year's bearing, and I make no boast when I say I can do it every year with these vines. They measure round the base of the stem 8 inches and 4 at top. They were the admiration of every one who saw them. I don't write this to brag about grape-growing, neither to get it put in your *Monthly*, only to say "that there are as good fish in the sea as was ever caught."

Cerasus Borealis.—*J. R. S.* says: "This is a very pretty small tree, or large shrub, that I never saw recommended for planting; handsome shaped head, beautiful bark, good foliage; flowers as pretty as many of the Spireas, and the fruit quite ornamental."

Rogers' No. 4.—*H. W. R.* says: Growth *very* vigorous and healthy—no appearance of mildew or rot. The fruit ripened nearly as early as Delaware, and is *very* showy in size of both bunch and berry. When thoroughly ripe it is a fine fruit; the *best* (all things considered) of the six varieties of Rogers' Hybrids that I have fruited. These varieties are Nos. 1, 3, 4, 5, 15, 19.

Fruit Growing in the United States.—Mr. Sargent remarks in our last, that America, he thinks, the worst fruit growing country in the world. In our next we shall give a paper by Mr. P. Barry on the same subject.

Viburnum prunifolium, *J. R. S.* says, is good for the shrubbery or as a single plant, though very rarely planted, being so common,—the woods here are filled with it. I think it the best deciduous hedge plant we have."

[We have before remarked, in our journal, that this is one of the best plants for ornamental grounds that we know.]

Barking Trees—*J. A., Phila.*, writes:—"I read, with great interest, in the *Monthly* last summer, I think in the July number, a so-called cure for barren apple trees. It was recommended that the trees should be girdled and the bark entirely removed around the tree on the longest day of the year (20th of June.)

"May I ask the favor of your informing me whether you approve this seemingly cruel treatment?

"The article seemed to have your endorsement, but I shall hesitate to risk so heroic a remedy without your positive doctrine."

[We will go fully into this interesting subject next month.]

NEW AND RARE FRUITS.

Lorrain Grape.—We have samples of this new white grape from Mr. Barney, who says it is a chance seeding taken up with other seedlings under an Isabella vine, by Mr. Hopkins, of Lorrain Co., and that the foliage in form and color resembles Catawba, with the texture of Isabella.

The berries had fallen from the bunch, which had been many days reaching us, but were in fair condition, not having fermented. It has a honied sweetness, rather a thin skin, bunch and berry of fair size, and we should judge from these samples, (though late in the season, Oct. 1st), a first rate variety.

Mount Vernon Pear (Brincklé).—This Pear raised by the late Hon. S. Walker, of Roxbury, Mass., and described and figured by Dr. Brinckle, at page 27 of the 2 volume of the *Gardener's Monthly*, still retains its excellent character. At the last November meeting of the Penna. Hort. Society, some specimens from Messrs. Walker & Co. were exhibited, and were awarded the Society premium for the "Best Seedling Pears" not before exhibited. The specimens were larger than the figure given by Dr. Brincklé.

Grape, Nordin's Seedling.—A variety with this name was exhibited at the Oswego Fall Agricultural meeting, but beyond the statement that it was "early and delicious," we have no description.

Apple, Whinery Red.—Is figured in a late *Prairie Farmer*, which says it was received from Mr. Mark Bonsal, of Salem, and that it is unable to decide whether it is not some other apple under a new name. It is thus described:

The size small; stem and seeds very small; color dark red, lighter about the calyx, with fine specks of white; glossy like the Romanite; mild sub-acid; fine flesh and juicy. For an apple to be in such good condition the middle of July, we should say the **Whinery Red** was a good thing to have.

Grape, Black Barbarossa.—This is not a variety which properly comes under the head of "new or rare;" but a bunch weighing within an ounce of 5 lbs., and remarkably well ripened, such as is now before us, from Mr. J. H. Cook, Cuyahoga Falls, Ohio, and which his excellent gardner, Robert Linney sends us, is rare, and merits a place in this column.

The Freeman Peach.—My attention has lately been called to a new seedling peach produced this year for the first time, so far as known, on the farm of Captain H. C. Freeman, of this place. I think it merits attention for its combination of very excellent qualities at a very late season of the year. It ripens after all other good peaches are gone—the last of the crop having been just now gathered—showing a season four or five weeks later than the Smock, and

about two weeks after the Heath Cling. Its appearance is much like the Smock, from which it is probably a seedling; but it surpasses that reliable kind in quality, being more juicy and of better flavor, fully equaling the Early Crawford when in its best estate in these respects, as it does in size.

These are the facts as to this year's crop, and it is the opinion of our peach men who have seen it, that it will prove the greatest acquisition to the peach list which has been made for years; as it can prolong the season of choice free-stone peaches in the Middle States and Southwardly for a month or more. Like most of the late ripening kinds it has a long season of maturity, and is free from rot. For this latitude, and for all places where it will ripen, it promises to be an invaluable market variety.

The tree seems to be a strong grower and free bearer—leaves long and narrow with globose glands. Fruit large, round, yellow with red cheeks, flesh red next the stone, perfectly free, juicy, and of Crawford flavor.

Very truly yours,
Parker Earle.

South Pass, Ills.

[It is unnecessary to say to those who know Mr. Earle, that a description of a new fruit from his pen is as reliable a stamp of novelty as any test that the American Pomological Society might promulgate. Mr. Earle, however, did not add the name to his description, we have ourselves placed the name "Freeman" at the head of the paper.—Ed.]

Arnold's Hybrid Raspberries.—In the *Gardener's Monthly* for October, is an article on Hardy Raspberries, referring especially to some new Hybrids raised by Mr. Charles Arnold, of Paris, C. W. I have had two of these, Nos. 1 and 2, growing in my garden this summer, and as I deem them, (as far as my brief acquaintance will authorize me to form an opinion), *very* promising; I will with your permission give to the Horticultural world what information I can concerning them.

One plant of each number was sent me last spring by Mr. A., simply for trial. My soil is too dry and light to allow any Raspberry to reveal what its capabilities really are. But they were set out and left to show what they could do. They both grew rapidly and strongly, the white one considerably more so than the red. Each yielded a few berries so that I could form some opinion of their quality. Of course fruit borne the same season that the plants were set, could not be expected to equal that yielded by well established plants. But yet the fruit of both was *decidedly good.* The red I thought nearly as good as Belle de Fontenay, though not as large. The white I cannot pronounce with your correspondent, "much superior to Brincklé's Orange," for it must be a *wonderful* raspberry of which I could say that, but it was certainly *very good.*

The growth of the plants has been remarkable. They have thrown up enormous canes, (the white one very nearly an inch in diameter at the ground), which stand up like young trees. At about four feet I pinched them back, which has caused them to throw out many branches, and these, on the white variety, are now loaded with fruit.

I shall leave them unprotected this winter to test their hardiness. If, as claimed, they are *perfectly hardy*, and the size and quality of the fruit improves with the age of the plants as much as we may reasonably expect, they will certainly prove an invaluable addition to our stock of Hardy Raspberries.—W. H. W., Reading Mass.

Kramer Seedling Strawberry.—*A. M. Purdy*, in *Prairie Farmer*, says: I will make the following proposition: If it (the "Kramer Seedling") is *superior* to the Wilson in those qualities required for a profitable fruit, I will pay for the 1000 plants sent me, *two hundred dollars.* If it is even decided equal to the Wilson in bearing, I will pay one hundred dollars for the thousand sent me.

The Salem Grape.—*Mr. E. S. Rogers*, of *Salem, Mass.*, in the *Country Gentleman*, says: "I would here state that before sending out the Salem, there was a spurious, black sort, cultivated by some and sold for the Salem under the name of No. 22, as I was informed by several parties who had fruited it."

Main Seedling.—The Editor of the *American Journal of Horticulture* cautions against purchasing a variety now trumpeted about the country as the "Main Seedling," which is nothing but the Concord.

Apple, Gipsy King.—This apple is a very distinct variety, very handsome in color and shape, skin covered over with nut-brown russet, intermixed with red and carmine on the sunny side ; flesh yellowish, rich and sugary. Highly recommended, as a late keeping variety, by the *English Pomologist.*

Roundway magnum bonum.—This is a very large, late English Apple, an abundant bearer, and of excellent habit. "The Gardeners' Year Book for 1865" thus describes it : "This is a first-rate culinary apple, and one that may also be used in the dessert. The fruit is large, roundish ovate, and angular on the side. The skin is lemon yellow, with a few broad broken streaks of pale crimson on one side. The flesh is yellowish-white, tender, crisp, very juicy, and with fine aroma. This was raised by Mr. Joy, gardener at Roundway Park, Wilts.

Frogmore Early Bigarreau Cherry—*A new English Cherry.*—The *Florist and Pomologist* thus describes the "Frogmore Early Bigarreau Cherry :—At its highest excellence, perfectly ripe and waning towards its end, before any of the other Bigarreaus have yet made their appearance. It was raised by Mr. Ingram, at the Royal Gardens at Frogmore. Unlike the class to which it properly belongs, it has a tender melting flesh ; in every respect it is a Bigarreau in habit, leaf and appearance of the fruit, and must be classified along with those varieties ; but as if to set at nought all human arrangements, it persists in having a delicious melting flesh, instead of one that is hard and cracking. The tree is a great bearer, clusters of a dozen and half to two dozen large, handsome cherries being produced on a small spray ; and the fruit ripens in the middle of June."

Grapes—Hybrid Clintons from Dr. A. P. Wylie, of South Carolina. Mr. Arnold, of Canada, and Mr. Moore, of Rochester, have found the Clinton an excellent stock to hybridize. Dr. Wylie finds the same facts in the South. Some specimens he has kindly sent us, show how well he is succeeding. The berries are as large as Black Hamburg, and of excellent flavor. This one, called Clinton No. 1, was raised from pollen from mixed varieties, from the Lyons' hothouse, in Columbia, S. C. Some of the berries have measured an inch in diameter, and some of the bunches weighed 12 oz.,—coloring before Delaware. The success has been so great that Dr. Wylie is hybridizing enthusiastically.

Arnold's Clinton, No. 5.—When we first called public attention to the real merits of Mr. Arnold's hybrids, many of our best pomologists were incredulous. But they are proving still more valuable than we anticipated, and we think will mark the 5th era in American grape history —the introduction of Isabella and Catawba, Delaware, Concord and Rogers' Hybrids being the other 4. We find a figure of No. 5 in a late *Canada Farmer.* It is 10 inches long from the first shoulder, narrow, berries white, and about the size of Clinton.

Amelia Peach.—Mr. F. R. Elliott describes this in the *Horticulturist* as follows :—

"The Amelia is a seedling variety originating with Mr. George Husman, of Hermann, Mo., well known as a skilful viticulturist and an enthusiastic promoter of horticulture. The original tree in his grounds was this past season in full bearing, healthy and exhibiting appearance of a robust habit, much like the Columbia, from which it is presumed it sprang.

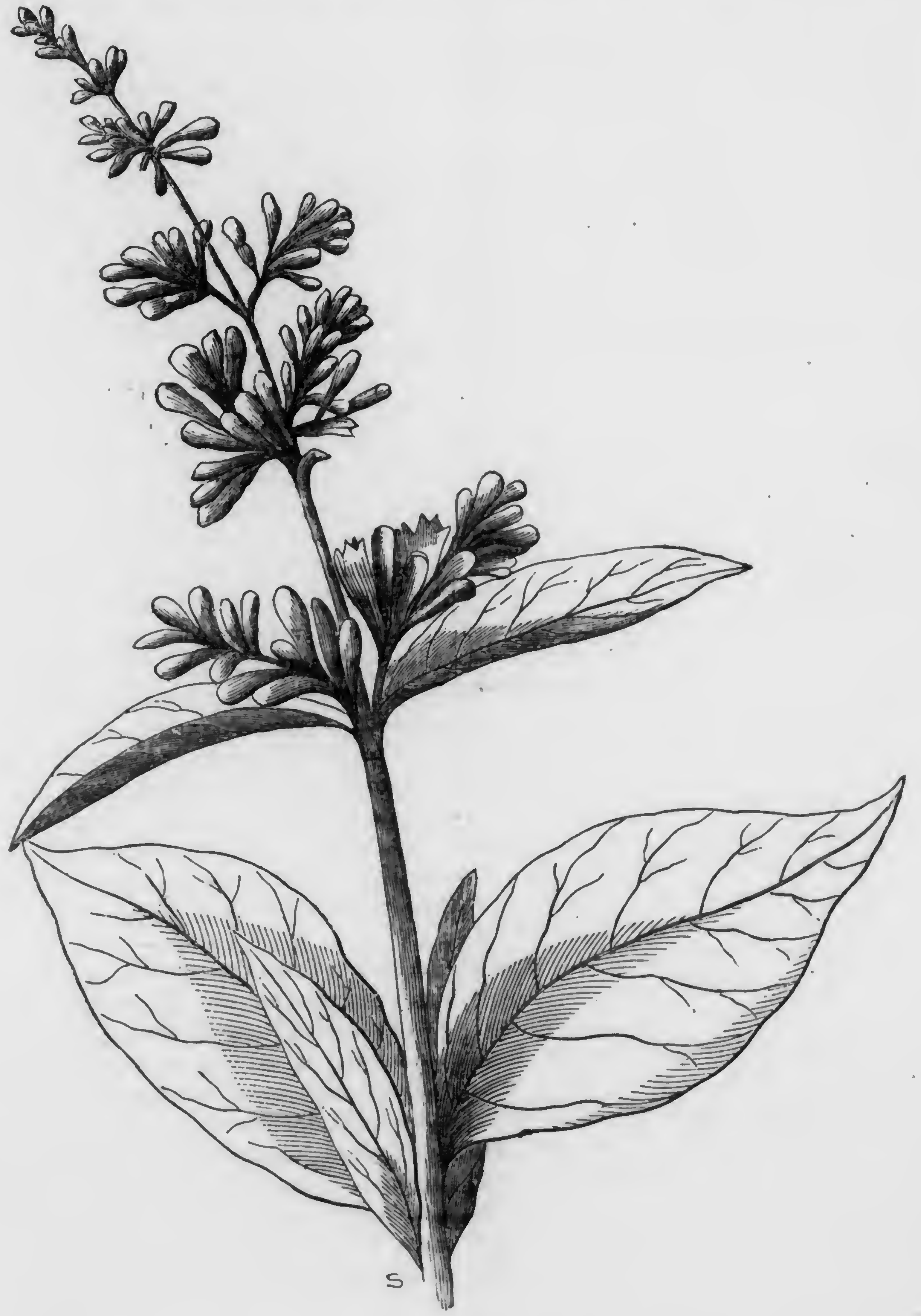
The fruit is large, one quarter larger than Columbia, round, with a well-defined suture, one side deepest toward the apex, which has a rounded point. Color, clear rich yellow, marbled with dull red. Flesh, thick, yellow, rich, juicy, sweet and separating freely from the stone. Season, about one week to ten days later than Columbia. Leaf with indistinct globose, almost reni-form, glands. Pit rather large, angular pointed, and deeply corrugated."

Rasche Apple.—The same writer says of it :

"Originated with W. Rasche. Leaf broad, rounded, oval, thick and coarse. Young wood, dark brown red, with buds very prominent. Tree a strong grower, productive and hardy. Fruit medium, roundish, flattened at ends ; surface with slight appearance as of being ribbed. Skin glossy, smooth, greenish yellow, with small, irregularly scattered gray dots, with a shade of deeper green suffused underneath around ; faint traces of russet at the stem end. Stem short. Cavity, regular, open, and rather deep. Calyx, closed. Basin broad, open, deep, abrupt. Flesh yellowish, crisp, juicy, mild, sub-acid, rich and high-flavored. Core medium, compact, close. Seeds abundant. Season, December to March."

NEW AND RARE PLANTS.

Syringa Josikæa,—*A New Hardy Flowering Tree.*—Last year we gathered a beautiful specimen of this small tree, fifteen feet high, in full flower to figure for our readers. An account in the English *Farmer*, which we give below, remind us of it. The plant seems to do much finer than it does in Europe. The trusses of rich maroon flowers were not much smaller than those of the common lilacs. The flowers are more narrow and slender than the common lilac,



[Syringa Josikæa.]

being more like the common white "Fringe," and indeed the leaves and growth are both very much like the Chionanthus.

The English account says it flowers simultaneously with the common lilacs, but the Philadelphia plant came into flower just as the others went out, which we thought one of its merits, as thus prolonging the lilac season. The propagation is like the other lilacs, by suckers or offsets. It grows much stronger than the common species, making a small tree instead of a mere strong bush, as the common lilac does :

"It was discovered in the Siebenburgen (we presume the mountains on the Rhine so named) by a lady—the Frau Baronin von Josika, after whom it was named *Syring Josikœa* by Baron Jacquin, who exhibited it and described it at a scientific meeting in Hamburg in 1830. It was next noticed in the *Botanische Zeitung* for 1831, and living specimens of the plant having been obtained, it was sent by Messrs. Booth (the eminent nurserymen of Hamburg) to Dr. Graham, the then Professor of Botany in Edinburgh, who figured and described it in the *Botanical Magazine* in 1833. It was also figured in the *Botanical Register* and other botanical or horticultural publications of the day.

The occurrence of a distinct species of *Syringa* in the mountains of the Rhine has a wider significance than at first would appear to attach to it. It has a bearing upon the disputed place of origin of the common lilac. Persia is usually taken for granted to have been the place of its nativity, and DeCandolle, in his *Geographie Botanique*, specifies it as one of those species which by naturalization, and spreading from gardens and cultivation, giving rise to what he considers the unfounded supposition that it was a native of Europe. On the other hand, there is strong evidence of its occurrence in Europe in places where it can hardly be supposedto have been introduced either by man or any of the other usual agents of dispersion.

Dr. Heuffel (*Bot. Zeitung*, of 1831) states that it adorns with its copious blossoms the inaccessible, chalky precipices of the Coerna Valley and Mount Domaglett, in Hungary, as well as the whole group of rocks along the Danube, at the military boundaries of Moldowa, Szaszk, Csiklova and Krassova. But no stronger proof could be wished than the actual occurrence in Europe of an allied species, which is not present in Persia or anywhere else. Such is the *Syringa Josikœa.* It is perfectly hardy, and flowers in the open border simultaneously with the common species—that is, in May and June. If gardeners would bestow the same attention on the species which they have upon the common one, we can see no reason to doubt that they would obtain varieties with as large trusses of bloom (if that be desirable) as they have done with the *Syringa vulgaris.*—M., in the *Farmer.*

Euonymus radicans variegatus.—This pretty dwarf and compact growing plant has stood the past four winters with us without sustaining the least injury, although in the protracted storm of last January the minimum temperature was one night as low as 11° Fahr., and on several occasions under 15°. The constancy and beauty of its silvery white variegation, which is occasionally tinged with pink, makes it highly suitable for ribbon lines and edgings ; and the free rooting property from which it derives its name renders it of the easiest propagation, as its branches even put forth an abundance of roots above ground, where the plants are grown in a close, warm, moist atmosphere. Our four-year out plant is not yet more than nine inches high, although house grown specimens of the same age are about twice that height ; and for foliage effect stands in favorable comparison with the silver-edged geraniums, hence it will be found especially useful for amateurs and others who may have no means for wintering these universal favorites. We observe that the successors of the late Dr. Von Siebold are sending out from their celebrated Leyden nursery the original or green form of this plant, which is expected to be still more hardy, and if of the same compact habit of growth it will also be excellent for edgings.—*Gard. Weekly.*

Aralia Sieboldii.—Has stood out the last three winters alongside of the lays, and although its leaves, or rather leaf-stems, were bent down and slightly injured by the snow and frost of last January, the plant is now putting forth a full complement of new shoots and enlarged foliage. Mr. Fortune states that in northern Japan this species is a handsome evergreen bushy shrub, from twelve to fifteen feet in height ; and its fine glossy foliage, which when viewed at a short distance, may be compared in size and the appearance to that of the horse-chestnut, will form quite a novel feature among that of other hardy evergreens.

Griselinia littoralis.—This beautiful,

glossy, broad-leaved evergreen, which grows in New Zealand to the height of sixty feet, was not in the least affected by the 11° of minimum temperature last January, which cut down the common *Laurustinus* and injured the shoots of the common bay laurel, as well as those of the sweet bay, that were growing in its vicinity, so that it may be considered one of the showiest of hardy evergreens.—R. M. S., *in the Farmer.*

[*Griselinia littoralis* always suffers severely near London in hard winters, and has been frequently destroyed at Stoke Newington, notably so in the winter of 1860–61. In the nursery of Mr. Drummond, Bath, it is not hurt in winter, and it flowers freely, and bears abundance of berries, but no doubt they will prove of great value for our Southern States.—Ed. *G. M.*]

Poa Trivialis Argentea elegans (Silver-leaved Meadow Grass). This is thus described in England : "This plant is commended as one of the most useful and beautiful varieties of hardy grasses with silvery white-margined leaves yet introduced to gardens. It is strictly a perennial in habit, forming a remarkably dense and compact many-branched growth from the base, and by its natural and free tendency to emit roots upon the under shoots, makes a close, yet gracefully free growth from 4 to 9 inches in height, and with a luxuriance which renders it suitable for grass plots or terraces, covering the ground-surface with a herbage as close as an ordinary meadow, whilst its elegantly-variegated leaf-blades produce an effect upon a much larger scale than can be had from any other silver-leaved grass.

By forming ornamental portable specimens and suspended basket groups of this variety in the early winter and spring months, for conservatory and greenhouse decoration, it will at those seasons be found by far the most brilliant and picturesque plant in its tribe.

From its ready increase, it is especially adapted for small flower-stands and vases, and by its freeness in growth when placed in a genial warm greenhouse, it is equally adapted for larger groups and designs, affording a fine relief or contrast with green-leaved plants of uniform growth and size. For a vase of finer ramose Lycopods or Ferns, the silver-leaved meadow grass will form an exquisite silver chain or outer belt, or a group of the latter, margined with the former, or the still more graceful Isolepsis gracilis, would be very effective.

No other yet introduced is so admirably adapted as the present one for marginal effect, or as a belt for conservatory decoration on a large scale.

The facility of its growth, ready increase, and uniformily picturesque effect in the embellishment of illuminated drawing and ball-rooms, when cultivated in large groups, render it one of the most valuable of plants in its section ; and the first example of a long-wished-for-desideratum of a plant perfectly adapted, by greenhouse culture, for floral decoration by day and night throughout the winter months.

The Silver Meadow grass differs from the variegated forms of Dactylis by the much more dense and luxuriant growth, the former having numerous small rootlets upon the under stems ; the latter species are generally restricted to solitary tufts of growth, without such roots, and thereby admit of but slow increase.

DOMESTIC INTELLIGENCE.

OBITUARY.

Dr. Dewey, of Rochester, is amongst the losses of the month. In many branches of science he was distinguished, but known to our readers, chiefly, as one of the leading American Botanists. In some branches of botany he had few equals, and was looked up to as authority by his contemporaries.

Jersey Port Wine.—In every grocer's store may be seen pictures of a beautiful girl gathering grapes ; and every effort is made to induce the public to believe that the wine to which this card alludes is the genuine juice of the grape.

United States officers are made to certify in advertisements to the "genuine grape wine made from the real Port grape in so and so's vineyard in New Jersey ;" and clergymen are found to recommend it, for "sacramental purposes," as the pure juice of *the grape.*

Now there are many who do not believe that Passaic (New Jersey) grows the genuine Port grape ; but it does, and so do all other parts of New Jersey.

The following is Mr. Robert Bulwer's statement from the English consulate, at Oporto, to the British Government, as to how our "Port Wine" is made; and we see no reason why our "Samburg Port" New Jersey friends may not be considered national benefactors, for their efforts to drive the foreign stuff from the market:

"The way in which, what in England is called Port Wine, has hitherto been manufactured for the London market, is this: The Paiz de Venhaterio abounds in the elderberries; the berries of these trees are dried in the sun or in kilns. The wine is then thrown on them, and the berries are trodden (as previously the grapes) till it is thoroughly saturated with the coloring matter of the berries. Brandy is then added in the proportion of from three to sixteen gallons to every pipe of 115 gallons. *This is the composition of all the Port Wine hitherto drank in England.* No pure wine, no wine not thus specially adulterated for the English taste, was allowed by the Government Committee of Tasters to pass the bar of Douro before the year 1865."—*Forney's Press.*

VARIETIES OF THE SCUPPERNONG.—On the Cape Fear they have another variety of Scuppernong; the common variety being white, furnishes a light and clear wine. The second ripens as the first is being exhausted, is darker in color, and produces a stronger wine; a third ripening still later, being matured in the house, frequently lasting until Christmas, furnishing an exceedingly strong wine, readily causing intoxication. The vine thrives best in a sandy loam, but prospers well now on every variety of soil that is sufficiently dry to yield any of the ordinary hoed crops of the county. I think it will endure the climate any where south of the James. It is not practical to prune it, except with great care and at certain periods—never in the spring—nor without dressing the wound with great care, the bleeding being so profuse as to soften and force away any other than a very tenacious dressing.—*Correspondence of Southern Planter.*

HOW TO MAKE AN OLD ORCHARD BEAR FRUIT.—While admiring the dark green and luxuriant growth of grass in the orchard, I remarked to Mr. Lewis that nearly all the old orchards of Herkimer seemed to be dying out, but that his trees were looking unusually well—but did they bear fruit? He said he found no difficulty as yet in getting good crops. Last year, for instance, when the apple crop in Herkimer was almost an entire failure, his orchard, containing perhaps 170 trees, gave him a thousand bushels of apples, and that is about his average crop. But how did he do it? The secret is worth knowing. Well said he, "there is no great secret in the matter. You see I get large yields of grass from this meadow by liquid manuring, but the trees are benefited by the manures quite as much as the grass, and perhaps more. I feed my grasses and I feed my trees, and they do not fail me."

One great feature in the use of sawdust for absorbing liquid manures, is that it can be spread evenly and is easily broken up in minute particles, and thus becomes more available to the roots of plants and trees.—A. WILLARD in *C. Gentleman.*

GOODRICH POTATOES.—Mr. Goodrich raised over 16,000 seedling potatoes of which number less than 10 sorts have proved of value to the general cultivator. They are the Cuzco, raised from the seed of the wild Peruvian, and its progeny the Early Goodrich and Harison; the Garnet Chili, from seed of the Rough Purple Chili, and its progeny Calico; lastly the Pinkeye Rustycoat, from seed of the Western Red, and its progeny the Gleason.

In addition to these is the *Early Rose*, not raised by Mr. Goodrich, but obtained from seed of the Garnet Chili in 1861, by Mr. Albert Bresee, of Vermont.—*Practical Farmer.*

SOUTHWESTERN VIRGINIA is an Arcadia of pastoral lands, live stock, grain and fruits; of salt copper, lead, lime, gypsum, sulphur and other minerals; and its soil and climate are unsurpassed in fertility and salubrity. Its waters flow southwest into Tennessee, and northwest and north into the Big Sandy and New River. In its centre nearly is a garden, called Burke's Garden, inclosed by nature with mountains for palisades; a parallelogram lying north and south, in which rises the Blue Stone spring, flowing through the only outlet on the western barrier into Wolf creek, a branch of New River. It is one of the richest and loveliest spots in a whole region of fertility, beauty, mineral wealth, and curious and wonderful topography. This region, independent of its portion of the Alleghany range, contains about 5,000 square miles, and is capable of containing a population of 650,000 inhabitants. —J. R. RUFFIN, in *Southern Planter.*

SOUR AND SWEET APPLES ON THE SAME TREE.—The *Maine Farmer* gives an account of this phenomenon on the farm of Capt. Benjamin Allen. We have seen accounts of this freak frequently in various parts of the United States. It is no doubt characteristic of the Rhode Island Greening to vary in this way.

THE RAMIE.—It is planted by root cuttings, and propagated by layers and cuttings, increases very rapidly—2000 plants having this year been started from 20—and springs up perennially from the roots, wherever the ground does not freeze a foot deep. From 2 to 4 cuttings, yielding each 150 pounds of fibre, bringing now in London 60 cents in gold, can be gathered annually from every acre of well-rooted plants.—CORRESPONDENT in *Southern Cult.*

THE BEECH AS A HEDGE PLANT.—It may be used with much success, making a beautiful hedge, if care is used in shortening in. I saw many hedges of this kind in Switzerland, Eastern France and Prussia, and was struck with the adaptation of the beech for a thin but effective hedge. It branches little, is stiff and keeps its place. I saw but little that was killed or injured by dry seasons.—T. S. L., in *Maine Farmer.*

FOREIGN INTELLIGENCE.

WINES OF ENGLAND AND FRANCE.—In the comparison of French and English wines, made from fruit other than the Grape, the preference, as to superiority, must be given to the French manufacture. With really superior fruits we make worse wines. It may be that, hereafter, this department of English industry will receive more attention, and that with this attention, the quality will advance.

There are two principal modes of preparing wine from fruits,—the one by fermentation, pure and simple; the other by the addition of eau-de-vie and of sugar. The first procedure gives the veritable wine. As to the latter, the simple fermentation is allowed to proceed with a greater portion of the fruit, the remainder only being mixed, in the first instance, with eau-de-vie and sugar, and when the fermentation is complete, mixed with the residue of the liquor to give it flavor and body. All parts of the fruit are ordinarily submitted to fermentation. The white and red wines of Burgundy are in high request for coloring and giving flavor to Gooseberry, Apple, Cherry, Peach and other wines.—*Agricultural Gazette*

BOUQUETS AT THE BURY ST. EDMOND'S EXHIBITION.—Of Ladies' Hand Bouquets some 40 were shown, which it is impossible to criticise, except so far as to say that we by no means fall in with the views of the judges as to the most meritorious among them. The 1st prize was given to Mr. Delamere, Holm Lane, Oxton. This bouquet consisted of pale Roses, Stephanotis, Myosotis and Heliotrope mixed in the centre; a band of Bougainvillea, and outside of this again were Roses and mixed flowers, and a fringe of Adiantum cuneatum. The 2d prize fell to Mr. B. R. Cant, Colchester, whose bouquet was spoiled by a huge Eucharis bloom in the centre, which was out of character with the other materials. A prettier effect was produced by the 3d prize bouquet, sent in by Mr. Robins, Oakley Park, who had Rose buds, sprigs of Kalosanthes, Heaths and Myosotis in the centre; the margin fringed with Hordeum jubatum, and the surface feathered over with Airopsis. It was spoiled by a stalk of the variegated Cyperus alternifolius at the crown, and by having too much Airopsis, but was otherwise very pretty. Several of the others showed considerable talent in the art of arranging flowers, especially one from Miss S. Goodrick, Hengrave Mills, Bury, which was the most tasteful of the whole lot.—*Gardener's Chronicle.*

HORTICULTURAL SHARPERS.—England has her share of Horticultural sharpers, as well as the United States. The *Gardener's Chronicle* gives the following as a sketch of "one of their ways" of working:

"One summer afternoon a gentleman alights from his dog-cart at Mr. Royston's extensive grounds, and gives in his card, 'Mr. Walter Long, Longsight, Manchester.' He has come to look out some shrubs, trees and floricultural rarities, for his 'place.' He evinces considerable knowledge of the specimens shown him, but defers to Mr. Royston's judgment in the selection. About fifty pounds'-worth are chosen, and promised to be sent off. Mr. Long explained that he never ran bills, always preferred to pay cash ; but having been at great expense about his 'place,' and having allowed himself to be persuaded to exceed the amount he intended expending in shrubs, he supposed his acceptance at two months would be satisfactory ? The candor of his manner disarming suspicion, Mr. Royston was prevailed upon to part with his goods on those terms. In two months' time he discovered himself to be a victim of the "Long" firm, without hope of redress. It is worse than useless to sue a man on a bill who has got nothing ; while as no 'false pretences' had been made, he was not amenable to criminal law,for Walter Long really lived at Longsight, Manchester, and had a 'place' there comprising two rooms, and about half-a-crown's worth of furniture.

A month after this bill had been dishonored, the same gentleman, in the same dog-cart (hired from the neighboring town), presented himself once more at Mr. Royston's place of business. Mr. Royston could hardly believe his eyes ; called him a thief, and a swindler, and ordered him off his grounds.

'All you say may be correct.' Mr. Long owned very calmly. 'I am a swindler, and I don't deny it.' I am a member of the 'Long' firm, but our rule is never to swindle the same man twice. I am come to make as far as lies in my power, reparation for the loss I caused you. You remember those shrubs you sent me ? I sold them pretty well, I am pleased to tell you. (Don't get angry, but listen.) They gave such satisfaction, that I now have an order to supply another lot at a much better figure, and I thought 1 couldn't do better than come and make an honest deal with you for them.'

'And you think me fool enough to be gulled a second time !' said Mr, Royston.

'Nothing of the kind, my dear sir ; I bring the money with me' (he produced a bundle of notes), 'and I do not wish you to part with your goods till they are paid for. I am sure you are too good a man of business to allow any sore feeling at being 'done' before, to interfere with an opportunity of turning money now. Besides, we do business honestly at times. I have a *bona-fide* commission to buy these trees, and out of my profit I will certainly pay you something off the acceptance.'

Mr. Royston not seeing how he could lose money on such terms, was finally persuaded to deal. Shrubs were selected to the same amount as before—fifty pounds—packed in his wagon, and started into town ; the arrangement being, Mr. Long should drive Mr. Royston to his hotel, where he would pay the account.

Having directed his man not to deliver the goods at the railway station, but to wait with them outside the hotel for orders (a precaution which Mr. Long assented to as quite justified), Mr. Royston mounted the dog-cart, and was driven into town to the hotel by his customer. Arrived there, Mr. Long called for brandy-and-water, cigars and writing materials ; paid his hotel bill, somewhat ostentatiously displaying his gold and notes ; and asked Mr. Royston to write him out a receipt for the amount of his account.

This done, Mr. Long began to count out the money in payment ; but stopped in the middle of his occupation, as if struck by a sudden thought.

'This won't do,' he said thoughtfully. 'I have not been a swindler for nothing. If I pay you this money now, you will pocket it for your acceptance, and then go and tell your man to drive back to your place again with the shrubs, so that I shall be swindled this time.'

Mr. Royston disclaimed any idea of the kind.

'No doubt, my dear sir, no doubt ; but a man in my position can't afford to place himself in any one's hands. Now you see, that I have the money to pay, and I know that you have the receipt in your pocket. Tell your man to deliver the goods at the railway station (goods department), when I will give you the notes, and you can hand me the receipt. That's fair to you, and secures me.'

Not seeing any hitch, and knowing that Long had the money, Mr. Royston acceded to this proposition, though not without considerable hesitation. Accordingly, the goods were consigned at the railway station, to a Manchester firm by Long's directions. Mr. Royston asked for his money.

'Shake hands with me, my dear sir,' said Long : 'you are the best friend I ever met.'

'What do you mean ?'

'This. My train starts in ten minutes ; you can send in your account when you please, or you can draw on me at two months, if you prefer—or book it, you know.'

Royston fetched a policeman ; but when Mr. Long explained that it was a mere matter of debt to be recovered by the usual process, the constable regretted that he could do nothing in the case."

HORTICULTURAL NOTICES.

AMERICAN POMOLOGICAL SOCIETY.

We continue some of our notes, giving the discussion on Pears, and a few other matters of interest. The whole of the pear talk was in the most rapid manner,—several members speaking nearly at once,—our report, however, we believe correct, so far as it goes, though we fear, we have omitted some opinions which would have been valuable, had we been able to catch them in time.

Clapp's Favorite, a pear recently originating at Boston, was highly commended on all hands. Barry said not very vinous, but good and promising.

The President pronounced it the largest, handsomest and best, of early pears, productive, lacking nothing for a first class pear. It ripens ten days earlier than the Bartlett.

Edmunds. Barry said not handsome, but good at Rochester.

Julienne is old, but a good variety and of first quality.

Howell. Barry said handsome fruit. Husman, fine and productive. A voice from Ohio said, "fine," and others from Cleveland, St. Louis and Boston, said "good."

Beurre Superfin. Williams of Montclair, N. Jersey, "Fine, but rather acid."

Sterling, beautiful and desirable market fruit, although of second quality. Wilder said early.

Wedgewood, somebody said was a good early pear, ripening about 25th of August.

Beurre Diel cracks in, with Wilder ; with Warder 3 years out of 4. Fine with Dr. Long. "Well" with somebody at St. Louis, cracks in Illinois, no disease with Heaver, (Cincinnatti) in 25 years.

Beurre d'Anjou was universally commended as one of the best pears of its season, as well as one of the most profitable for market at Alton, Ills. Good with Brown.

Sheldon, Mr. Lyon in a report says, was highly commended without dissent ; but our notes say, Hooker of Rochester, "one of the best," Bronson of Geneva, "very good," Mc Cullough of Cincinnatti, "leaf blighted badly," Trowbridge of Connecticut, "cracks," Manning of Massachusetts, "first-rate.

Beurre Clairgeau was extolled for beauty, size, flavor, but not 1st rate by Barry.

Dorr and Richardson were also inquired for, but nobody answered.

Tyson was highly praised, although a tardy bearer, by Clagget, Mo., also Colman's, Mo., experience. Wilder, "a first class amateurs fruit." Williams, hangs well on the tree—bears later on standards.

Onondaga is generally successful—excellent for market with Wilder.

Easter Beurre, not approved ; needs a long season at Alton, Ills. Parker Earle, South Pass, Ills., poor quality. In Ohio, fine. In St. Louis, fine.

Winter Nelis, small, but excellent. Wilder, poor. Barry at Rochester, one of the best when well grown, wants good culture, and the fruit thinned, when it is one of the noblest of pears ; others spoke of it as "generally good." A 'mass' voice said it was "poor." Hooker (Rochester) thought it too uncertain. Flagg at Alton, found it "good in a long season."

Lawrence, McCullough (Cin.), "best winter pear," also said Colman and Brown Smith ; at Rochester some said very good. Good with Williams at Mont Clair, N. J. A late autumn pear with Dr. Hull, at Alton, Ills. Some one at Keokuk, Iowa, said keeps well till April there. T. T. Lyon, Plymouth, Mich., said keeps long and very good.

Flemish Beauty, "bad" with Wilder ; at Alton, Ills., "fine." Cincinnatti, some one said "best they have," but Heaver of the same place, said "variable." Parker Earle, South Pass, "leaf blights." Brown Smith, "very good, if gathered early." Bryant, Princeton, Ills., "leaf blights." Nelson, Fort Wayne, "one of the best and most profitable."

Beurre Hardy. Barry, "fine, first quality, fine foliage." Williams, 'cracks very badly at Mont Clair.'

Beurre Bosc, several spoke in its favor. Clagget did not like it, and Colman, both of St. Louis, thought it poor.

Vicar of Winkfield. Sylvester, found it valuable at Lyons, N. Y. Wilder found it good, when managed like Easter Beurre.

Dix. Wilder, slow in bearing, sometimes cracks, but fine when it comes right.

The President presented the following list of pears unanimously recommended by the Massachusetts Horticultural Society, as the best for general cultivation in that State :

Bartlett, Seckel, Urbaniste, Merriam, Sheldon, Beurre d'Anjou.

Next to the above, if the list is to be extended :

Brandywine, Doyenne Boussock, Beurre Bosc, Onondaga, Howell, Lawrence.

And for a further extension :

Belle Lucrative, Paradise d'Automne, Beurre Superfin, Marie Louise, Beurre Clairgeau, Vicar of Winkfield.

Cherries were next considered, but received little attention.

Dr. Edwards, of Missouri, in behalf of the ladies of St. Louis, presented the President with a beautiful wreath of evergreens, interwoven with flowers, which was accepted by him with the warmest expressions of gratification.

On account of the want of time, it was ordered that the reports of standing committees be received by the Secretary, unread, and published with the proceedings.

On motion of Mr. Nelson, of Indiana, the following preamble and resolution were adopted :

Whereas, The time left to this Convention for the discussion of the merits of the apple, is entirely inadequate to do justice to this great staple and most important of all fruits ; therefore,

Resolved, That growers of that fruit be requested to communicate with the General Fruit Committee in regard to the value and adaptation of different varieties to the different soils and climates, as well as the diseases of the fruit and the tree ; and that said committee may communicate the same to the Society, at such time and in such manner as they shall deem expedient.

OHIO POMOLOGICAL SOCIETY.

The Annual Meeting of this Society took place at Sandusky, on 7th of December. The snowstorm prevented many from attending ; as it was, there was an average of about fifty members present each day—not as many as usual, we were informed. The show of fruits was not as large as on former occasions, but were—Apples and Grapes—of high character. Amongst the former were not many new—but the Grimes' Golden Pippin, now several years before the public, but little known, was prominent. Moore's Extra, from Sciota County, was favorably received ; and the Lady's Favorite, from Tuscola, Flory's Seedling Bellflower and Carpenter's No. 1, received favorable notice from the committee. Of grapes, there was nothing better than the far famed Catawba. Of whites, however, a new one,—Lorraine—seemed to us to promise favorably to compete for the honor of being the best white grape out.

We arrived there the end of the first day, and found Mr. Bateham urging the Society to change its name from Pomological to Horticultural Society, a suggestion which was afterwards adopted.

Col. Richmond, a very successful fruit grower, then gave a very interesting history of fruit growing at Sandusky. Dr. Warder followed by an excellent address, which, as it was in manuscript, will no doubt be published in the transactions of the Society.

Being in a favorable grape region, this subject had an excellent chance for ventilation. A long list of varieties was taken up—many of them produced no response, but on the following a discussion took place :

Adirondac had not done well with some Sandusky growers. Pretty fair at Delaware, Ohio.

Aiken. Some speakers thought a distinct seedling ; others that it was no more than an Isabella, which had got modified by soil or circumstances, —a sort of coquetry Miss Isabella is known to be guilty of.

Allen's Hybrid. Bateham had found liable to mildew. Meehan (not a member, but invited to participate) had no doubt of its being the result of an attempt to hybridize, but thought the pollen of the native had been inoperative, and that it was a foreigner of about the same rank, in general for cultivation, as Golden Chasselas, which often did well in the open air. Mr. Campbell, of Delaware, said he had a seedling which he knows is a hybrid, and yet as much like Allen's Hybrid as possible.

Alvey. Mr. Miller, of Springfield, a first-class grape, but unproductive. Barnes, of Sandusky, —if not too severely pruned bore well.

Black Hawk. Warder said foliage and habit like Concord ; a little earlier, rather sweeter.

Black King. Campbell said was a little earlier than Concord but inferior in flavor.

Brinckle. A member said not hardy.

Cassiday, Barney had found to have many good qualities, but the bunches were too small, and the other qualities were not sufficiently superior to outweigh this defect.

Catawba. Elliot said "nothing equal to it today," and other speakers agreed with him to a greater or less degree.

Charlotte was said to be, by several gentlemen, not Diana, but like it. Elliott and Campbell unable to detect any difference, and Barney remarked that he had found Diana variable enough to make a Charlotte.

Christine, Meehan said ranked in Pennsylvania as a valuable early grape, though not of first-class excellence. It was the same as Telegraph.

Clinton. Praised highly by Bateham for productiveness after it was 3 years old ; his experience was in heavy clay soil.

Concord generally praised—and the announcement made that it formed an excellent sparkling wine.

Cuyahoga had been found valuable in wine-making, for mixing with other varieties.

Cynthiana. Like, and Warder thought might prove a rival to, Norton's Virginia.

Delaware. Had not done well with Warder till this year—was very good this year. Bateham said it was better than anything else this year. Too much moisture in the subsoil would prevent a Catawba from ripening, but would not thus affect a Delaware. General Mills found Delaware to prefer limestone clay. Buttles thought the prevalent idea that an extra rich soil is necessary for Delaware an error.

Diana Hamburg, one gentleman had found a rather late variety.

Golden Clinton, Campbell had found wanting in flavor.

Detroit, like Catawba, but earlier.

Hartford Prolific. It was noted by several, as a good point in its favor, that it would hang long on the vine, and one need not hurry it on to a falling market. Some had known them remain on the vine till Catawbas were ripe. Warder had seen them, at Knox's, on the vines so late as October 10th.

Hattie. It was said there were two of the same name.

Iona, Col. Richmond said, last year, it dropped its leaves ; this year it promised very well. It did not bear as much as he would like,—but he thinks much better of it than he did. It ripened with him one week earlier than Catawba. Col. Buttles, of Columbus, gave an excruciating account of his experience with it. He commenced in '65 with 53 vines, from Dr. Grant, planted in a soil and situation especially praised by him who said "he would give a good deal for a few inches of such soil on Iona Island." In the fall, all the vines were dead except one, which grew remarkably strong, and proved to be a Rogers' No. 9. Determined to succeed, he set out 500 more, of *first quality* vines. 165 were all that were alive in spring. Undismayed, he set out 500 more, of which many died ; but, determined to survive the excoriating process, he put in again another 400. His whole bill for Iona vines with the Dr., was $1800.

He begins to have some hopes at length, as he has now 50 little vines alive, and from one he got a tiny little bunch last fall. In view of a five dollar book having been recently got out, with no other object than to puff this grape, he wanted information, and to know whether it was worthy of culture, or whether he was a victim of misplaced confidence.

Mr. Stephens said the demand for Ionas had been enormous, and the vitality of the vine had been impaired by steam propagation to supply it. Another gentleman denied that the Iona had been so extensively planted as to create any more demand for it than for many other popular vines. Dr. Warder said, other kinds of vines had been steam propagated as badly as Iona. Mr. Campbell said he could and would engage to produce, by "steam propagation," as good vines which should be permanently as healthy as vines raised any other way.

Bateham said the fact that it did well with Col. Richmond, and in other places he had seen, showed there was nothing diseased in the constitution of the vine. It might be found that it was a grape not so well adapted to general culture, in all parts of the country, as some others. This year was a very peculiar one, and should not be taken as a final test of its value. He feels sure it will do better another year. He has no interest in Iona, any more than any other grape,—but it is so good a grape, when it does well, that he would not have cultivators too easily discouraged.

Mr. Marshall said he had 50 vines, 2 years old, which, although they had not fruited, grew encouragingly. Dr. Newton said they had done pretty well on Catawba Island, and he had heard they were pretty fair at Vineland, N. J.

Mr. Meehan was asked if a statement circulated by Dr. Grant, in every hamlet in the Union, that he would as soon have an Iona as a Muscat of Alexandria was still his opinion—as the questioner believed that opinion had been the cause of numbers being planted ? Mr. M. was also asked for his experience of the grape in Pennsylvania. Mr. M. said it was a matter of taste. He would prefer a well-ripened Iona to a Muscat of

Alexandria. Many others might not. The notice referred to was not authorized by him; and if the parts of the latter given in asterisks had been fully supplied, it would have borne another construction.

He had seen some instances of great success in his State with Iona,—and far many more failures: not more so, perhaps, than with some other new grapes. Thousands of dollars have been spent on new grapes in his vicinity within ten years, but no one had any fruit of any consequence to show, but Concord and Clinton. He knew of a case of Ionas which were tolerable last year, but of no account this. Elliott moved to drop the discussion of Iona, until we "see the fruit on the vines." Carried.

Israella was not esteemed of any consequence. Buttles had a similar experience with it as with Iona.

Isabella found many advocates. It and Catawba were still the favorites in New York market. Storrs knew $500 to net from one acre. Richmond deemed it more reliable than Catawba.

Mottled, Mr. Kelley said, had all the essential qualities of Catawba, but two weeks earlier. Bateham had seen it at Carpenter's. It behaved admirably, was heavily loaded; when Catawba along side rotted considerably. Must marked 94 and Leike says best of any for wine. Campbell agreed to its wine virtues, but not as good to eat as Catawba.

Norton's Virginia necessary to be strongly rooted or it does not transplant well. Col. Richmond said it made a good dark wine, but did not recommend it very highly.

Rebecca, Buttles would recommend as a good amateur's grape. Campbell had only found it reliable in sheltered places.

Rentz, Meehan said, good for wine, but unfit for table. Warder seconded this estimate.

The Society then took up Roger's Seedlings, but there was such a manifest difference of opinion as to what grape the members had reference to under each number, that we fear the numbers have got inextricably mixed, and we shut our notebook in despair of making up any report of a reliable nature.

Dr. Warder then gave one of his characteristically beautiful extempore addresses on the value of practical entomology, of which we made full notes, and will publish some day if space permits.

We are under great obligations to many friends at Sandusky, who all united to make our visit a pleasant and instrnctive one.

KANSAS STATE HORT. SOCIETY.

Under this name a society has been established which promises to be one of vigorous usefulness. The first meeting was held at Lawrence on Dec. 12th. Most of the prominent horticulturist of the State attended.

From the remarks of some of the speakers we gather that in Kansas *the apple* does best on the elevated lands. Subsoiling is found very beneficial. The hot suns of August often causes the bark to crack. The "sap blight" causes some annoyance. Cultivation destroys roots. Mr. Ross had found the roots extended but three inches beneath the surface. Low branched trees preferable.

Of the *Pear* the "leaf blight" had killed the half of Kelsey's trees. They do not bear as young as in the east. Do well on the quince. Duchesse d'Angouleme weighes 1 pound at times. Standards promise to be most profitable. Tanner had 200 trees in bearing. Fruit brings $1.50 per dozen in Leavenworth. Should plant 1000 trees in spring. Brackett had found it bad to stir the soil for dwarf. Ceased the practice and his pears now did well.

Of *Peaches* Dr. Housely had them bearing beautifully. With many the buds had been killed, and he proposed to plant for screens. The curculio prevented very bright prospects for *plum* culture in Kansas.

Cherries of the Morella class were spoken of as a successful crop.

Of *Grapes* the Concord seemed to generally do well. Members were divided about all others.

The *Strawberry* does as well in Kansas as in any State east. Most of the speakers had found the Jucunda every way better than any other. Wilson's Albany the next best for profit; Maxwell, however, giving the latter his first choice.

In *Raspberries* the Purple Cane had many favorites. Philadelphia was attacked and defended by others.

In regard to *Blackberries* several had found the wild kinds of Kansas preferable to Lawton, but not so thought Maxwell. He also had been successful with the *Currant*, but Housely, Brown, Ross, Tanner, Stayman and Lines had not. The currant borer and summer heat seems to be the stumbling block.

The *Gooseberry* did well with all.

The subject of pruning at transplanting was discussed, but the speakers seemed divided in their opinions as to the advantage or injury of the practice.

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HINTS FOR FEBRUARY.

FLOWER GARDEN AND PLEASURE GROUND.

At the time of writing this (early in Jan.) the weather is mild, and the hard Winter weather of the whole of December seems broken up. No doubt we shall soon again have another visit from the grim Ice King, and then we shall not be let off so easily. Now, although our December temperature ruled almost continually below 20°, and often near Zero, vegetation is apparently no more injured than if we had had but half-a-dozen degrees of frost. This is from the equable night and day temperature, and the absence of dry winds. Soon however the tissues will be gorged with sap, and the hot day suns and dry winds will cause rapid evaporations, when many losses will follow even lower temperatures than we have had in the past month. So those who have half-hardy plants unprotected will find much value yet in covering them. For hardy plants, or any small things that will bend down, common earth is as good as anything. It acts just the same as snow, which we know is one of the best plant protectors. For most larger things a simple shade from the sun will be effective.

All pruning should be done as early as possible, for the later it is left, the weaker the shoots push,—the roots store up sap all Winter for a grand push in Spring, and the end buds get most of the supply, by cutting back early the lower buds get time to fill up strong as the cut away ones were.

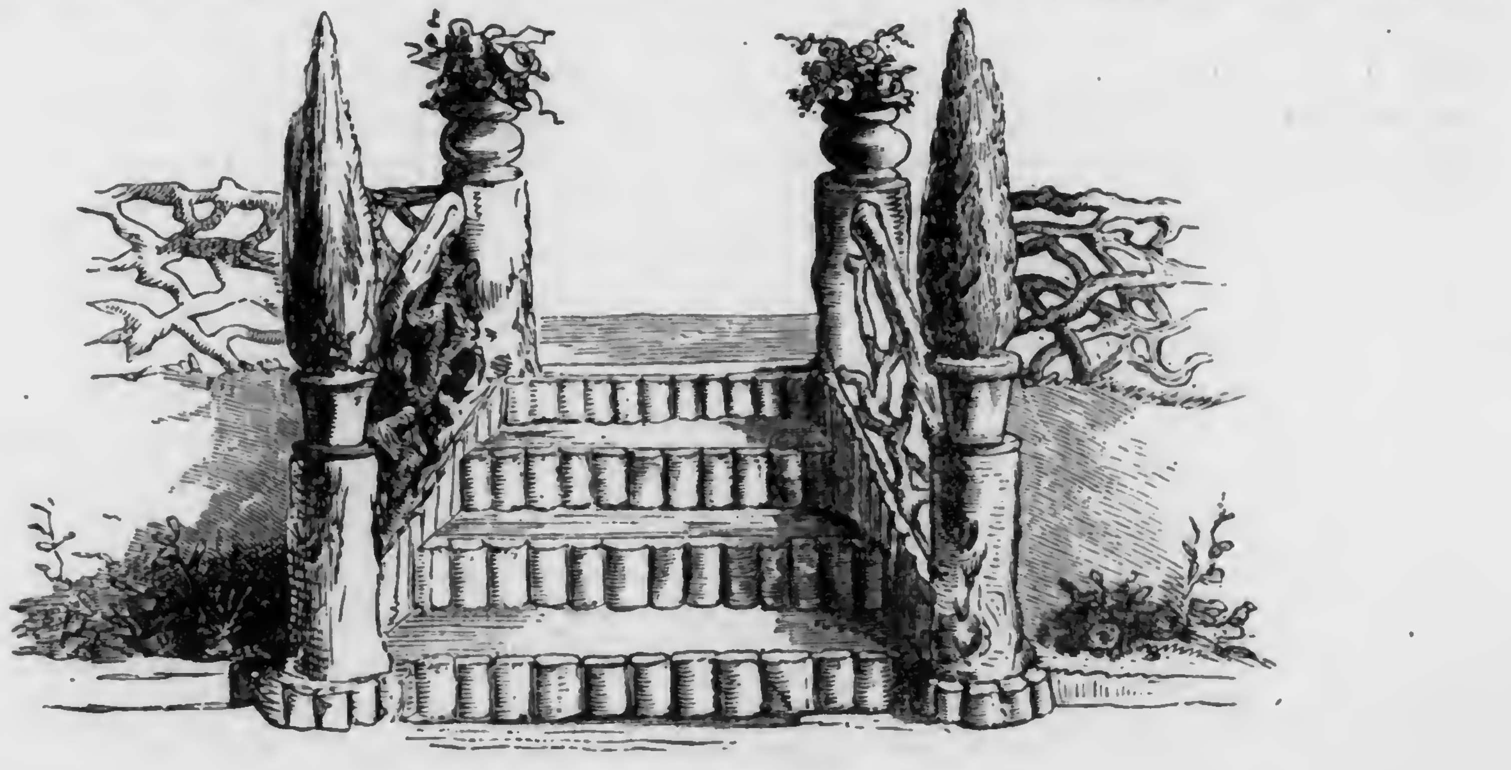


FIG. 1.

Hedges that have been neglected, and are to be renovated should be cut down to six inches from the ground if not already done. Miserable things, mere trees of a dozen or twenty years standing, may be reconstructed most beautifully by this cutting down process. Hedges generally should not be cut at this season for any other purpose than to bring them into shape.

Rustic adornments very often highly embellish grounds. These can be made of split wood nailed to board frames. The worst feature is that they rot away so soon in our climate as scarcely to serve long enough for the labor. To guard against this every part of the frame work should be tarred or painted, and the pieces used for the fancy work should be stripped of its bark, and painted of various shades of color to represent natural shades of bark. The effect is not so striking as when the bark is left on, but we have to sacrifice a little to permanence.

Fig. 1, is an illustration of a rustic flight of steps taken from Noel Humphrey's work, which will serve to show what we mean by splitting sticks.

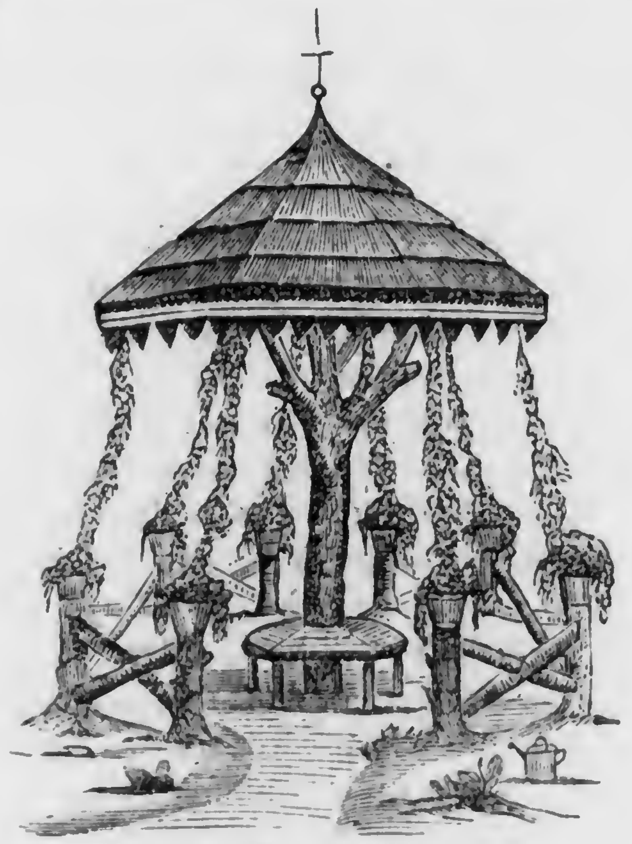


FIG. 2.

Fig. 2, is an old tree turned into a rustic seat. In this case also we would strip the bark off, as well as open the soil about the collar of the tree, and tar well to preserve it from rotting there.

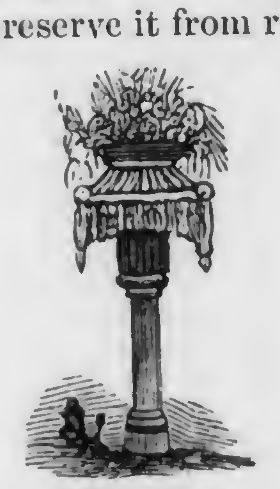


FIG. 3.

Fig. 3, is a design for a rustic flower stand,—but these can be made of so many designs and shapes by a handy laborer that models are scarcely necessary.

In those parts of the Union where frost is over, February is the great planting month, but do not plant immediately after the frost leaves the soil; wait till it dries a little, when you can tread the soil firmly about the roots without risk of rendering it hard as it dries more. If circumstances make it necessary to plant in wet soil, do not press the soil much until it gets drier. It is important to have the soil well pressed about the roots, but it injures soil to press it when wet.

As soon as the frost leaves the ground, the lawn should be rolled with a heavy roller, while it is yet soft; this will make it have a smooth surface, take out many small inequalities, and press again into the soil the roots of the finer grasses which the frost may have drawn out. Where new lawns have to be made next Spring, the seeds should be sown as early in March as possible, and the ground should be prepared for that now, if opportunity offers. For a good lawn the soil should be loosened at least twenty inches deep, and be well enriched with stable-manure, where practicable, in preference to any concentrated preparations. Guano, super-phosphates, &c., are well enough; but they do not give the soil that *fibre*, or lend it that *porosity* by which it retains moisture and air, so essential to perfect vegetation.

FRUIT GARDEN.

Discussion is still progressing, as to whether it is right or not to prune fruit trees at transplanting. Our advice is to do so, more or less, in *all* cases.

Wherever grafting is to be done, many proceed at once when they think frost is over. Our experience is that the best time is just as the leaf buds are bursting. The grafts must be cut long before, and buried in the earth to keep them from shrivelling. When the scions are thus preserved grafting may be done to near midsummer. Very strong and long grafts may be used on all trees, if not done too early. Marshall P. Wilder gets strong trees very soon by this plan. If too early done these long shoots would dry up. These remarks are for amateurs who have but a few trees to do; and it is now almost necessity for every one to have some varieties which are not found to do well in a locality re-grafted with those that will. Nurserymen who have much to do, must begin early; but they use short grafts, with little evaporating surface exposed. For wax to keep out the air from the wound, farmers use common earth, with a piece of rag tied around to keep it from washing away. Others who have more to do, use beeswax, rosin, and lard in about equal proportions, melted, and applied a little warm. Some years ago we published a plan for making a liquid wax, simply melted rosin poured into a bottle of alcohol. In the next number we shall have a paper by Horticola on an improved French method.

Grape Vines are of course all pruned and tied up. Just as the buds are bursting the steel blue beetle attacks them. Hand killing is the remedy. Where Grape Vines are to grow fast, use twiggy stakes or wire trellis for them to cling to. It is as good as manure. Also in planting Grapes be sure to have a dry bottom. The best security against wet roots is to raise the soil above the level of the surface. Also the drier the soil the richer it may be without risk of injury. Organic manures *sour* rapidly in wet places, and injure fibres.

Peaches that have the yellows may be recovered by pruning in to the old stump. Dead heart wood makes yellows,—the sap thus becomes obstructed, and there is no remedy, but to let the tree thus renew itself. The curl is caused by a rapidly changing temperature. Plant them where they will not push out by a few warm Spring suns.

Curl is as bad as curculio. If the young leaves get injured the fruit near them falls. Peaches should only be pruned when they lose vigor, or when necessary to correct form.

Gooseberries and Currants should have their weaker shoots thinned out, and a little of those left, shortened. It makes the fruit much larger. The foreign varieties mildew badly unless grown where the roots will be moist and cool in Summer, but not wet. All these mountain or high northern races, want a cool Summer soil. With the exception of the Cluster there has not been much improvement on the Houghton's Seedling which is the most popular of the more hardy American class. Of Currants the Red and White Dutch and Versaillaise are we think still the best.

Of Strawberries, Wilson's Albany remains the *most generally* popular; deficient in flavor, as it undoubtedly is. Of course they "may be set out now," but such hints are almost too stereotyped to be of service to our readers.

Of the Fruit Garden for February we may say in a general way—

Never plant on a cold, windy day, and do not plant fruit trees on a poor, thin soil. *Subsoil*, *drain*, and *enrich*, cannot be kept too prominently before the planter. If the trees grow too luxuriantly to bear well after this, it is easily remedied. We can plant dwarf trees, or root prune, or practise Summer pinching and training. The last can only be done successfully by experts. Where skill cannot be employed, dwarfing and root-pruning will be extensively used.

VEGETABLE GARDEN.

In those favored localities where the frost has melted before the suns of Spring, the gardener will lose no time in getting in his Potatoes, Beets, Carrots, Parsnips, Peas, Spinage, Radishes, Lettuce, Onions, and Salsafy. These should be the first crops put in after the season breaks up for good. The earlier they are in, the better. Asparagus, Rhubarb, and Horse Radish beds may now be made. Asparagus roots are generally planted too thickly to produce fine shoots,—they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich, and moist soil. Horse Radish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole; a clean, straight root will then rise up through the soil.—Crowns or eyes are better than pieces of roots, where they can be had, and a rich clayey soil better than a light sandy one.

About the middle or end of the month, or still later in the North,—say the middle of March,—Celery and late Cabbage may be sown. Here we usually sow the second week in March.

Those who have hot-beds will now sow Tomatoes, Egg Plants, Peppers, and other vegetables that can be forwarded by this means; and those who have not, will sow them in boxes or pans and forward them in windows. Every garden ought to have at least a few hot-bed sash to forward early vegetables; for if they have no means of applying artificial heat to them, the sash will of itself forward some things considerably.

All gardens should have beds of herbs. They are always looked for in the Fall, and nearly always forgotten in Spring. Now is the time to plant Thyme, Sage, Mint, Balm, and other perennial herbs, and Parsley and other seeds of hardy kinds may be sown. When we say *now*, it is, of course, understood to mean where the frost has evidently broken up for the season. Our readers in less favored climes will not forget it when it does.

Many parties like to have Turnips sown in Spring. The only way to succeed with them is to sow as early as possible, and on a very rich piece of ground, where they may grow speedily. If they do not swell before the hot weather comes, they will certainly run to seed.

COMMUNICATIONS.

PEAR AND ITS CULTURE.

BY J. C. THOMPSON, TOMPKINSVILLE, N. Y.

Read before the Penna. Hort. Society, Jan., 7, 68.

I have read with deep interest the essay on "Pear and its Culture," by P. T. Quinn, read before the Pennsylvania Horticultural Society, and published in the *Gardener's Monthly*, for November, 1867.

As I have frequently visited the grounds in charge of Mr. Quinn, and carefully observed the manner in which he treats Pear Trees, and his mode of planting, training, manuring and keeping the ground in good condition, I am convinced that Mr. Quinn fully understands the subject he is writing on.

My experience in Pear culture runs back some seventeen years, increasing my stock, little by little, until they now number near a thousand bearing trees. Having given the subject my personal care and attention, and gaining from the experience of others, as well as from long and close observation of the wants and habits of the Pear, leads me to think I am somewhat competent to give an opinion on the subject of Pear Trees and Pear culture.

It is true that Mr. Quinn has gleaned the field so thoroughly that scarce a head, or even a grain, is left for those that follow; in fact, I might say he has given "Pear Culture" in a nut-shell, and then leaves the subject—a hint to the wise being sufficient. Yet, in commending his essay to the careful consideration of others, which, in my humble opinion, its merits entitle it to, I, at the same time, propose to say a few "last words" on the subject, and thereby, possibly, add a grain or two of knowledge and experience to the stock of practical information furnished the public by the excellent article referred to.

It is near twenty years since I heard that worthy nurseryman and pioneer in Pear culture—William Reed, of Elizabeth, N. J.—say, "It would be impossible to overstock the market with good Pears for twenty years to come." His prophecy of impossibility is literally true. So far from the market being overstocked with good fruit, fruit-growers are only just beginning to awaken to the importance of the Pear crop, or the great profit in growing good fruit, such as will produce well, sell well, and pay the grower well. And, hence, the inquiry is not only for more trees, but better trees, and for the very best varieties of fruit.

It was a saying of that worthy old pioneer in gardening—Thomas Bridgeman, the author of "The Young Gardener's Assistant"—"It is all folly to grow so great a variety of vegetables; select only the best of every kind, and grow that." This is equally true of Pears. Why cultivate such endless varieties?

My experience, like that of Mr. Quinn's, has fully satisfied me that we must come down, and keep down, to a few sorts, and those only of the very best kind for family use—for whatever is best for family use is surely best for market, always keeping in mind, too, good-keeping sorts and such as will bear shipping to market, and will keep well in the hands of consumers.

Fully half of the trees planted for the past twenty years have proved utterly worthless; money, labor, time and trees all lost, and, hence, fruit-growers have not been able to keep up with the demand, as the great prices obtained for good fruit clearly show: and, therefore, William Reed's prophecy is good for the next twenty years.

I endorse the mode recommended by Mr. Quinn, of preparing the ground, as far as he goes, as to depth, say twenty inches, but will add, I prefer the ground not only under-drained, if not naturally well drained, but also prefer the ground trenched by hand, to the depth of thirty inches. To do so by hand-labor, at this time, would cost over $100 per acre. But we must not lose sight of the main fact, viz.: the whole secret of success in Pear and Apple culture, to secure a good growth, is to thoroughly prepare the ground before planting the trees. It is this great oversight which has cost the country millions, by loss of labor, time, money and trees. It is true, the expense of trenching ground is enormous, even when only one or two acres are alloted to fruit growing. To spread out this outlay of labor, I recommend the plan of trenching the ground in strips three feet wide, where the trees are to be planted, lifting the earth two spades deep, and then forking up the earth under, so that the ground is moved fully thirty inches at least in depth. Or dig large holes, two or three, or more, feet square, according to the size of trees, throwing all the

dirt out, and then forking up the bottom full twelve inches deep. In filling up, put the best earth in first, mixing the poor with the proper compost prepared for the purpose, top-dressing bountifully around the trees. When trees are so set, it must be with a full determination that a strip at least two feet wide will in each following spring or autumn be trenched on each side of the trees so set, the process being continued till the whole plot is thoroughly trenched. This method allows the roots, as they push out, to find new, moist and soft ground to ramble in.

As to the best varieties to plant, we must be governed by the kinds that do well in the sections where they are to be planted. To the valuable list furnished by Mr. Quinn I would add only two more, Beurre Bosc and Columbia. Nurserymen have grown Beurre Bosc rather sparingly, owing, as they say, "to its making a poor appearance in the nursery, and its not taking the eye of customers;" but it is the gem of Pears. Charles Downing said to me, not long since, "If I could grow but one kind, it would be Beurre Bosc." The value of this Pear for market purposes was first brought to my attention by the commission merchant, who said they brought more money for their bulk than any Pears sent to him. In this I concurred, when he rendered an account of sales at $10 per hundred, the same price obtained for the best Duchesse. At first I was quite unsuccessful with Columbia, owing to its great weight for so delicate a stem, being liable to be blown off. As the trees became sheltered, the fruit hung on and matured well, and when ripened up, about the end of December, those who have seen and tasted the fruit will not fail to add it to the list of good Pears. It should be planted in well-sheltered places, or grown as espaliers; the latter plan is the best. Its great beauty and good quality renders it a valuable market Pear.

What is yet required in addition to the list referred to, is some good Winter Pears, ripening up very late. I have seen Glout Morceau kept well till spring but rarely. The fruit is irregular, and so liable to crack in this section, that its culture is being abandoned. I had to graft near a hundred trees of this sort last autumn. There is no good reason why our tables should not be supplied with Pears through the winter and spring, as well as those of France. Dwarf trees have been growing in disfavor for some time among the most experienced Pear-growers.

Some years since W. S. Carpenter of Rye, N. Y., advised me to abandon Dwarfs and turn my attention to Standards. I was reluctant to yield my good opinion of Dwarfs—but experience has taught me the folly of holding out to the bitter end—so that I now stand committed for *only one more Dwarf* besides *Duchesse*, and that is *Seckel*, with good planting and proper care it soon runs into a standard, bearing early and forming a beautiful pyramid. Beginners must bear in mind that *Duchesse* can only be grown well and profitably *on Quince*, as it is an age in coming into bearing on pear stock.

What Mr. Q. says in regard to "planting young trees," I endorse, and like him, prefer 'year ings," that is one seasons growth from the bud—for with older trees, say two and three years, we get more tops than bottom—that is we don't get our share of the most important part of the tree—the *rootlets.* While with yearlings carefully lifted we get the entire tree. Then to the cost of trees and transportation is largely in favor of yearlings, to which is to be added the greater certainty of living, and a more rapid growth in proportion.

It is true there are strong prejudices to overcome on the score of planting yearlings, "greenhorns" expect to buy full grown trees with the crops already ripe on them—while experts only laugh at their folly.

The public mind has yet to be educated up to the standard of the great advantage of procuring not only the choicest kinds, but well grown yearling trees—certainly not over two years growth from the bud. Nurserymen have been compelled to pander to the demand for *big trees*, but the sooner the big tree prejudice can be broken down the better for both the grower and the purchaser.

Such is the importance to nurserymen of keeping up a supply of *big trees* that they actually refuse to sell yearlings lest it break up their assortment and derange their rising stock for coming years. This I know, desiring a few hundred yearlings to *trim and train as they should be;* the nurseryman refused to fill the order for the above reason.

If purchasers understood the importance of having young trees, and demand them, nurserymen will soon gladly turn their attention to that class of customers, because owing to the less cost of trees and transportation the demand for numbers will be greater, and nurserymen can turn their capital oftener.

Dwarf Trees. It is the interest of nurserymen to encourage customers to take Dwarfs, because they are easier produced than Standards, a good stock can be kept up better, and therefore the profits are larger. Yearling Dwarfs are now sold to the trade at $12 to $15 per 100, and it pays better to grow them at that than one pear cutting at twice the price.

With regard to trimming trees, gathering and packing fruit for market, Mr. Q. has said all that is necessary to say. In conclusion, you will permit me to say that Mr. Quinn in giving his long practical experience to the public has rendered himself truly a benefactor to mankind, and set all cultivators an example well worthy of imitating. The experience of half an ordinary lifetime, which it took to acquire the knowledge he so freely communicates through the medium of your honorable society, will no doubt save tens of thousands of dollars to those who follow the advice, instead of plodding on in the old haphazard way.

The example I said is worthy of imitation, and therefore all should throw their experience on the altar of "Public Good," so that we may learn each other, thus doing all the good we can, carrying out the benevolent plans of Dr. Franklin, who, when he helped a needy person who asked how he should return the favor; why, of course help the first man that you are able to help, and so let good offices go round.

BEDDING GERANIUMS AND HOW TO GROW THEM.—No. 4.

BY J. C. J.

In former articles I have explained why certain members of the Zonale family barely if ever bloom well out of doors, but are pre-eminently adapted for pot culture under glass. These are the self whites, the Occulates, the Painted Zonales: to which must be added (in our climate) most of the Pink Zonales, especially those of late introduction, in which white is more or less conspicuous. And whether the Nosegay section do better as bedding plants or not, it is equally certain that the result, under glass, is highly satisfactory.

Our conditions of temperature and culture the robust Scarlet Zonales accept with a good grace, — although our hot months try their more delicate kindred to the utmost limit of long suffering forbearance, so that we have only an apology in the flower-beds for the splendid blooms these yield in the greenhouse.

When the remarks alluded to were penned, I drew only from my own experience, and was not aware that the same views were entertained and persistently advocated by the most scientific Geranium growers in Europe. The prevalence of heavy rains in England is just as antagonistic to the development of these choice Geraniums as our blazing sunshine, with the exception of an abundant foliage. But lately I have been reading up that admirable London periodical, *The Gardener's Magazine*, edited by Shirley Hibberd, F. R. H. S. whose numerous contributions on Geranium growing are full of interest and novelty. In these I find the amplest confirmation of my former opinions. In catering for the ever increasing pleasure of demand for Bedding Geraniums—the consumption of which in England is almost fabulous—the best talent has been called into requisition to originate new and improved kinds, and with marked success. But with the advent of so many choice novelties, came the unavoidable conclusion, that the best of the occulates and painted Geraniums could only receive justice under glass.

There is something peculiarly racy in the style of these articles on the Geranium by Hibberd. Their originality and frequency is absolutely refreshing, whilst the very pith and marrow of the most intelligent observation and experience is communicated without a shadow of reserve. He is at home in every haunt of noted propagators, professional florists, and amateurs of all classes, commons and nobles, from John O'Groats to the Land's End in Cornwall. He tells you what they have done, are doing, and expect to do—where and how many of the best Geraniums were raised, and confidently predicts still further shades in the march of improvement.

Little do we know here of the time, the patience, and the cost expended in the effort to originate new Geraniums, better than any which have gone before. Out of many thousand seedlings not more than half-a-dozen pass muster under the severe criticism to which they are subjected. And shortly afterwards two shades of these subside into the second rank, or are drummed out of the regiment altogether. Think of a Geranium held in strict reserve 5 years, so that a sufficient stock might be propagated to remunerate the owner, and who modestly demands thirty-one shillings and sixpence sterling for one small plant, (or about $10.) This price we are assured is by no means exorbitant. When this Sleeping Beauty raises up and bursts forth upon

the all-expectant outside world, it is intimated there will be something of a sensation. Will some liberal caterer for the public assume the risk of importing this coy beauty—Lucy Greive by name? Risk did I say, yes, the chances being even that she gives up the ghost on the way.

Reader, it would grieve thy heart to stand by and see a case of Geraniums opened immediately after delivery from the Custom House. Four, five, and sometimes six weeks smothering amongst moss in a closely packed box stowed fathoms deep in the hold of a steamship, is a fearful ordeal for young succulent and lately struck plants with main stems no thicker than the tube of a clay pipe. What a miserable exhibition of sick and wounded patients for the infirmary! Leaves yellow, and mostly dropped off, the tender shoots rotten at their extremities, the bulbs dry as the mummy of Pharaoh Necho. Recovery under such circumstances is next thing to a resurrection. Of course a large per centage is not resurrected at all. Pelargoniums are still worse, one-half usually suggest the utter folly of all efforts at resuscitation. The Geraniums which do survive are tedious convalescents. When the long vale of months has passed they yield a scanty supply of shoots from which many plants are struck, and thus try our patience greatly before showing bloom. All of which goes to show that if somebody ventures on the alliance, and Lucy Greive does not come to grief, purchasers have much expense to pay roundly for her ladyship.

But I shall be falling into disgrace with the beauties in my own harem in thus openly flirting with far off belles beyond the seas; let us hasten, therefore, to pay court to them as gallantly as may be.

MADAME WERLE, (Painted Zonale.)

Pure white, with an extremely delicate shade of salmon, pink at the base of the Petals, slightly advanced on their sides or lower edges. It would be difficult to imagine, and unreasonable to desire a more charming production than this. Its distinctive suggestion is—modesty based upon merit. The blooms are as near circular as may be, and above the average size, petals smoothe as ivory and most symmetrically arranged. Small plants throw up several fine trusses—the blooms exhibit a tenacity unequaled, so far as my experience goes, by any other Geranium. Hibberd bestows the highest encomiums on the first class production pot plant. To grow it out of doors, fully exposed to the sun, would be a kind of profanation.

SOUVENIR DE SIR JOSEPH PAXTON, (Zonale).

[*Goudon Sydenham.*]

This Geranium must not he confused with another Paxton named the "Souvenir," sent out (if I mistake not) by Paul, color scarlet. The subject now discussed has just expanded the first couple of trusses, which, as the eye first rests upon them, fairly startles the appreciative beholder. Directly you pass sentence of excommunication on all the Pink flowered Geraniums of former seasons, for we have nothing to compare with this. Poor Christine, covered with gay blossoms seemed anxious for help to run away and hide herself in a thicket of Rhododendrons just over the way. To particularize is not so easy, as I shall leave the best unsaid.

1st, as to color. Pink of the freshest and brightest type, not to be excelled, as there is absolutely no room for improvement—the centre piece white and most conspicuous. The individual blooms, which I am almost tempted to call perfect, are within an ace of defying criticism, expanding in sufficient numbers simultaneously to display a large and finely balanced truss on a strong stock, well up among the foliage, but not in the least leggy as in most of the Pinks. One can't help feeling a kind of smothered regret that the departed genius of a Sydenham Palace, after whom this flower is named, had not lived a little longer to behold the fair harvest now being reaped by the toilers in the Geranium field.

I had intended to say a good word for Beauty de Suresne, which is good enough to satisfy the most fastidious; but the Souvenir monopolizes all my admiration. As the latter can scarcely be in the market for some time to come, it is but common justice to add, that the former is quite a gem under glass, and is beaten only by the Souvenir.

RIVAL NOSEGAY, (Beaton.)

Not entirely new, but after comparison with all the other high classed nosegays, Hibberd calls attention to this fact, that in gorgeousness of color and wealth of bloom it has no rival. Only listen to what he says:—"It grows compact and dwarf, strong but branchy, and produces trusses in such numbers that one may fairly suppose its mission is to overwork itself—the flowers have either broad petals (for a nosegay) and the color is—oh! there is the rub, what is the color? I think if I called it rosy crimson, or crimson red, all our Geranium friends will understand me. It is a splendid variety, distinct from the thousand and one of our scarlets, distinct from all the orange shades and all the common shades, unique, brilliant, pure, powerful, glorious."—Pretty strong praise this, but it is true as gospel. I have it now in magnificent bloom, and no greenhouse, however small, should be without it all through the winter months. It does well also out of doors in a tenacious but not over rich soil, especially if partially shaded from the mid-day glare.

ERRATA.—In the October number, page 294, there is an error of the compositor, that I request correction. "Mad. Marie Mezard" is set down as quoted in the Foreign Catalogue at £5 sterling. It should be, (and was in my manuscript), five shillings sterling.

FOREIGN REMINISCENCES.

BY H. W. SARGENT, WODENETHE, N. Y.

So many of our countrymen, on going abroad, stop at Queenstown, making the journey through Ireland before they visit England, that it may not be unacceptable to some of your readers to know what to do after landing.

Supposing that one has seen Queenstown—which can be readily done in a few hours. There are two ways of getting to Cork,—by rail or up the river Lee, 13 miles. All subscribers to the *Gardener's Monthly* should go by boat,—a most enjoyable sail up one of the most charming of rivers. The scenery on the Lee and Blackwater can hardly be surpassed in the exquisite verdure of the grass, grand umbrageous character of the trees, and charming pastoral effects (especially to one just coming from sea) of the lovely rolling country on these two rivers, dotted with fine mansions, picturesque cottages, and old ivied ruins; mossy and grey castles, and towers battered down in the parliamentary wars.

As I propose to mention simply those objects connected with rural matters, which may be interesting to your readers, I shall omit all such things as can readily be learnt and seen through the medium of Guides and Guide Books.

Near Cork, and a very pleasant drive from it, are the far-famed ruins of Blarney Castle, with the renowned "Blarney stone," where, the porteress will assure you, "that she never knew a match to fail where lovers, kneeling together, kissed the stone at the same time." The groves of Blarney are very interesting. Here is a Yew, 700 years old, and an Araucaria 14 or 15 feet high,—very striking to an American seeing this extraordinary tree for the first time.

The environs of Cork abound in beautiful places. Among them is the seat of Mr. Leigh, with fine Araucarias, Pinus insignis, Thujopsis Borealis, and a most exquisite flower garden; the lawn, however here, as elsewhere in England, so filled with Daisy as to make one doubt whether there is any grass at all.

Near here is the residence of Mr. Pike, with a small but most effective Park of only one hundred acres; but so artistically managed, by letting in peeps of the distant country, planting out objectionable objects, and by the judicious grouping and massing of fine trees, as to lead one to suppose the estate consisted of many thousand acres. This Park was kept short by deer and sheep.

Near the house a lovely flower garden, principally ribbons,—one consisted of Variegated Alyssum, Eschcholtzia, Coleus, dark blue Lobelia, Tom Thumb Geranium, and Cloth of Gold Geranium.

A long, straight walk had a background of Hollyhocks, having in front, Yellow Calceolaria, Tom Thumb Geranium, Cerastium tomentosum. Also, long and circular beds of Purple Verbena, Gazania, Coleus, Yellow Calceolaria, and Variegated Geranium, (Mrs. Pollock.) A very pretty bed was a circle of dark blue Lobelias with a cross of White Alyssum.

The Araucarias and Deodars do finely in this portion of Ireland, though the Cryptomerias, Douglas Fir and Nobilis do not succeed.

Rather over an hour from Cork, by rail, is Youghal, beautifully situated on the Sea, at the mouth of the Blackwater, and where you take the little steamer to go up this lovely river. Near Youghal is an ancient house covered with Ivy, once the residence of Sir Walter Raleigh, and where, in 1588 and 1589, he received and entertained Edmund Spencer, the Poet, and they embarked together from this place to go to London to superintend the publication of the 3 first books of the "Faerie Queene." The house is in the old English style. Three high pointed gables crown the East front, and beneath the central one are the hall and entrance door.

The windows have been modernized,—the old diamond panes set in lead having been removed. In one of the kitchens the huge, ancient fireplace yet remains. The walls of the entire house are in a great part wainscoted in Irish Oak, black with age. The drawing room still retains much

of its ancient beauty in the preservation of its find dark, rich wainscot and its grand old carved oak mantelpiece rising, in the Elizabethan style, to the height of the ceiling.

The grounds are remarkable for the luxuriance of the Myrtles, Bays, Arbutus, or other exotics in the open air. In the garden were grown the first Potatoes originally brought from America. In the centre of the garden are four aged Yew trees, under which, as tradition says, Sir Walter smoked his pipe to the horror and consternation of his servants, who, thinking him on fire, poured water over him.

The sail up the Blackwater abounds in the most picturesque and beautiful views, having all the advantages wood, water and mountain can afford. Cnoc-maal-down soars up 2700 feet above the river. On a bold projecting bluff is situated Dromona House, where the old Countess of Desmond fell out of a Cherry tree, at 140 years of age, and was killed. This Cherry was first brought here by Sir Walter Raleigh from the Canary Isles.

After passing the seat of Sir Richard Musgrave, an old family famous in the Border Wars, and various other fine country places, we reach Cappoquin, near which is a celebrated Monastery of Trappists. Four miles beyond which is Lismore Castle, one of the seats of the Duke of Devonshire, completely restored by the late Duke. In 1682 it received. as its guest, the unfortunate James II, and an anecdote is told, that this monarch, when brought to the bay window of the great room in order to see the view, was so struck by perceiving the vast height at which he stood above the river running beneath him, as to start back with dismay. Hence the window is called King James' window to this day. All the state apartments at Lismore have, as I said above, been recently restored by the Duke. The dining room, drawing room and hall being all hung in tapestry bearing the emblazonry of the Cavendish family.

Beyond Lismore is Ballyduff, an interesting ruin of an old castellated mansion, and a good specimen of the style of architecture of the periods of Elizabeth and James.

In the neighborhood of the Lakes of Killarney are some fine residences, conspicuous among them are those of Lord Kenmore and the Hon. Wm. Herbert. In the grounds of the latter are the admirably preserved ruins of Mucross Abbey, 800 years old, and near which, in the centre of the cloisters, is a Yew 10 feet (the stem) in circumference—said to be the highest in Europe.

The Lakes of Killarney surpass both the English and Scotch Lakes in picturesque beauty as well as grandeur. On a fine projecting point of an island in Lord Kenmare's grounds, stands Ross Castle, built in the 12th century, destroyed in the Civil War by Cromwell; once the stronghold of the O'Donahue, whose spirit still appears on a white horse every seven years.

Innisfallen, perhaps the most beautiful spot in the world, is another island of 21 acres, with a grand old abbey covered with Ivy, built in the Seventh century, magnificent park trees—a thorn one hundred and forty feet in circumference, and a Holly with a stem fourteen feet in circumference.

Nothing can exceed the beauty of the drive and rides round Killarney. The country is always verdant from excessive mists and rains; and the beauty of the Lake and Islands, and grandeur of the mountains, are beyond description.

FRUIT NOTES FROM VIRGINIA.

BY OLIVER TAYLOR.

I wish to drop thee a few items from our section. We have had a remarkable season for grain, fruits and vegetables to grow, and with the exception of the later cherries, and the yellow peaches, all have ripened well, and generally been harvested in good order. Corn promises to be a very fine crop. So taking it altogether I have seldom seen such an abundant season. We have had but little drought and but little cause to fear too much wet. We seem to be between the eastern rain and the western drought. Our Strawberries did better than in other parts, from accounts, as the frosts injured the early and the wet the later; but here both did well. We find the Agriculturist quite worthless, as it blasts in the Spring or fires the foliage worse than any other in the Fall. The French does well, also the Albany and Russell. Our Apple trees are breaking to pieces often with the fruit; and there were so few curculio here this Summer that a Nectarine tree with us broke to pieces with the fruit; but the wet was too much for them and they all rotted just as they were ripening. I never knew it to occur before but that the circulio would have from four to six marks in each specimen of Nectarine, but this year I could not see one in six or eight specimens. What has become of him?

All kinds of insects seem fewer this year, and the fruit is fairer than usual. Our earliest Peaches were small and not quite as high flavored as usual; but the Old Newington, Grand Admirable and Sweet Melocoton, now just ripe are very fine, if not as good as ever. The Louis Phillipe, ripe last week, a large cling, was splendid; also the Shanghai, No. 2 and No. 5, both fine and nearly alike. Our Pear trees have blighted badly the past three years, and of over one hundred trees, I find the Seckel, Bartlett, Ott, and Virgalieu, are less injured and produce more fruit than any others. I believe the cause of blight in the Pear is owing to the fineness of the pores of the Pear wood, not allowing the sap to raise fast enough to supply the tree at all times, amid our brilliant changeable climate. Has the Pinus excelsa, fruited in America, to your knowledge? [We know of several.—Ed.] I have one with some seventy-five cones on.

I would like to hear of the size of the largest specimen of Golden Arborvitæ and Pinus excelsa in America.

The Grape foliage fired badly this fall, and the leaves nearly all off the Delaware and most other varieties, and even the Clinton leaves were quite spotted, but they, most of them, ripened their fruit. The past three years the Grapes here have been losing their leaves prematurely, and the fruit failing to ripen, excepting in some sheltered places.

CULTURE OF THE TOMATO.

BY L. B., PHILAD'A.

Every one who plants a garden must have experience of the difficulty of dealing with Tomatoes as usually grown: they spread over space where they are not wanted: they hug the ground with such persistence that nothing can keep them from it: they rot both when it rains and when it does not rain; and at about the end of September they come to an absolute end of all production. The consequence is that most people choose to purchase such as the market affords, and to pay for defective and unsatisfactory Tomatoes at a high price because an ordinary garden does not afford room for them. Having gone through an ample experience of this sort, I by accident attempted a mode of cultivation two years ago which has far exceeded my expectations in obviating the difficulties referred to; and in giving an ample supply of Tomatoes so far superior to those usually sold as to bear no comparison with them.

This mode is a rigid training of the vines on a high wall—a wall facing south in my case, but one facing east I think will do; while one facing north certainly will not do. Strips of lath nailed on posts or stakes say eight inches from the face of the wall suffice to keep the vines within the enclosed space, but they must also be frequently tied to the lath, or to nails driven in the face of the wall. Some trouble is requisite while they are growing most rapidly, but it will repay all the trouble well; being sure to keep the vines from falling or blowing down by whatever driving—tying or lath—may be necessary. I have had no serious difficulty in this respect, nor will any one who ties the vines frequently in July and August: using some soft flax twine, or strong cotton strings.

The result is that the vines grow and bear from the earliest time that any can be produced, until absolute freezing weather comes in November. I have had them in profusion and in perfection on the vines in two years as late as the middle of November,—the fall of both 1865 and 1866 being favorable as regards late frosts, or the delay of absolute freezing weather. And it is remarkable that the Tomato Plant under such circumstances continues to produce as abundantly to the last as could be desired, without check by any frost or chill that does not absolutely freeze the vines.

The fruit of the Tomato is peculiarly an air fruit, requiring the fullest sun, and the most free circulation of air to perfect it. In the shade or near the earth the fruit does not set, and if set, does not ripen. Under the best conditions for the vines in this respect the production is so much greater as to pay for all the trouble of attaining them, even if a wall or trellis were to be erected exclusively to produce Tomatoes. And those growing them for market purposes would be as well repaid as private cultivators. I can count up already about eight bushels as the produce of sixty feet of wall, and but twelve inches of earth surface at the foot in which they are planted, a brick walk three feet in width coming next; the vines have in three cases ripened fruit largely at a heigth of six to seven feet; and the bearing season has begun, or the production of ripe Tomatoes, about the 10th of August.

As every practical economy in producing this indispensable vegetable is really demanded to secure good fruit and enough of it, I trust some of your readers who have been annoyed as I have been by the old mode, will try the wall; and by a little expenditure of labor secure a result

practically ten times as great in this item of private gardening.

Postscript.

The above manuscript, mislaid at the date of its writing, may now be supplemented by a final paragraph stating what the experience of this year was. It was that the vines continued green and productive to November 13th, yielding a full supply for daily use to that time: that on November 13th over two bushels of well grown Tomatoes, green and ripe, were picked from perhaps sixty feet of wall, and that of these two bushels fully half-a-bushel remain all sound and mostly well ripened, to day, December 17th. All of the quantity picked November 13th ripening well, and being used as raw Tomatoes.

IS AMERICA THE WORST FRUIT GROWING COUNTRY IN THE WORLD?

BY P. B.

H. W. Sargent, Esq., of Wodenethe, Fishkill, on the Hudson, one of the most distinguished amateur horticulturists in America, in the last number of the *Gardener's Monthly*, declares emphatically that it is, and that he has arrived at this conclusion after two years of travel all over the Christian world.

This statement from Mr. Sargent is astonishing, and I can hardly think that it was written in earnest, or was intended to be literally understood.

I have several times passed through the most favored fruit-growing districts of Great Britain, France, Belgium and Germany; and my conclusion is, that we had fruit-growing districts, extensive ones, and many of them, in the United States, quite equal, on the whole, to any others I have ever seen, and that nowhere else in the world are fruits in general produced in such immense quantities and so cheaply as in the United States.

I think I have seen as many apples in one orchard in Western New York as I have seen in all England put together in a journey of a week.

Only think of a single county in which perhaps about half the land is under cultivation, producing annually, for apples *sold, half a million dollars.*

I think a single steamboat will carry to the markets of New York at one trip as many peaches as are grown in both England and France. As to pears, on my return from Europe in September last, after visiting some orchards and gardens at Boston and Rochester, I said that I had found no such crops of pears, and seldom such vigorous and healthy trees, even in the most celebrated pear districts of Europe. Other gentlemen who traveled with me concurred in this opinion.

Then as to Grapes. I have never yet seen grapes grown in any other country with so little labor and producing such immense crops as in the United States—four, five, six, and even eight tons to the acre. It is estimated that we have some two million acres now under grapes, and one state alone, Missouri, claims to have five million acres suitable for the vineyard.

Then see what Mr. Berckmans says in the last number of this journal about Georgia, and the Southern States generally, where not only the apple, the pear and the peach attain the greatest perfection, but the grape, fig, orange, olive and pomegranate are grown successfully. Then if we pass over to California we will find, as a friend writes me, *the paradise of fruit growers*, where fruits attain fabulous dimensions, are exempt from diseases, and grow almost spontaneously.

"America the worst fruit-growing country in the world"! What a mistake! We have our difficulties, diseases, insects, extremes of temperature, &c., but did Mr. Sargent find any place in Europe exempt from these? When I landed in England last May the whole country was bronzed with a severe frost which occurred on the twenty-fourth of that month, killing outright most tender garden crops and all fruit prospects. It had a similar effect over a considerable part of France. When traveling on the Rhine in July the weather was cold as in October, and the vine-growers were despairing of a crop. I think that one *very* fine vintage in five, is as much as growers, even in favorable districts, expect—so I was informed.

We saw wall trees devoured with armies of slugs. Red spider, mealy bug, more prevalent than in this country, but more vigorously repelled. In even favored districts of France we saw the pear trees with yellow sickly foliage and little fruit, and whole vineyards with scarce a bunch of fruit.

The fruit markets of Paris and London are well supplied it is true, but the fruits we see there are contributed by almost every part of Europe, produced in small gardens, and in glass houses, with great care, and the prices generally are beyond the means of the great mass of the people.

The only fruit I saw that approached our prices was the strawberry; of it the supply in Paris was immense and the quality good, and prices not much higher than in Boston or New York.

ON FUCHSIAS AND VERBENAS.

BY S. B., N. J.

How to grow good Fuchsias and Verbenas in large quantities in flower for the market. Fuchsia cuttings put in now of new growth in a temperature between fifty and sixty, will root freely. Pot them in thumb pots grown in about the same temperature, with plenty of moisture and light, will grow very rapidly. When the pots are full of roots shift into three-inch pots. Put about three inches of old tan bark, hops, or rotten manure, and plunge them in it up to the rim of the pot. When ready to shift again put them into pint pots, half plunging them. Shade during the middle of the day on bright days in Spring. In April you will have plants about two feet high of a pyramid form beginning to bloom. My mode of growing Verbenas is to get a lot established in two-inch pots in October, keeping them in a temperature of about forty-five or fifty, propagating from those and potting them three in a pot to save house room. About the first of March put them one in a pot and plunge in a cold frame, covering with shutters or mats frosty nights. I have found rusty Verbenas to grow out of it after putting in the frame.

PEAR TREE BLIGHT.

BY J. H. C., IRONTON, O.

When a young Pear tree blights badly most persons remove it root and branch, but is this right? I have known some such cases where the tree would recover and grow as well as any. I am not a believer in blight being contagious, and experience goes to show that a tree may recover and show no more disease for months.

If however others have a different experience let them speak.

[Exactly our opinion.—Ed.]

MY GRAPES, DURING THE PAST SUMMER AND FALL.

BY HORTICOLA, NORTH HOBOKEN, N. J.

Dr. Warder calls, in his American Pomology, America a glorious country for raising fruit trees. That is literally true, for I believe grafting fruit trees may be done successfully with a wood-axe. If, however, by raising is meant managing in order to have fruit, keeping them in health, and protecting them against the host of innumerable enemies lurking around them in the atmosphere, as well as in the soil, Dr. Warder's assertion must be limited, and cannot be considered as applicable to many parts of this great country.

H. W. Sargent, Esq., of Fishkill on the Hudson, calls America, in the December number of this magazine, p. 366, "The worst fruit-growing country in the world, except the north of Europe." He does so immediately after his return from a tour through Europe, comparing only England with the United States, not even France or Germany, to which countries England is, in respect to fruit growing, so much inferior.

The readers of this magazine know that I have patience enough to wait, and to try again, if I meet with a failure. No enemy is so formidable as to frighten me into a disgraceful abandonment of the field before I have given fair battle to him. If I, therefore, do not concede that a certain degree of despondency begins to dishearten me, attributable to increasing failures and diminishing success, I do not mean to intimate that I have resolved to give up, but that I cannot help changing my plan of operation in rejecting what is refractory, and in retaining what appears to be suitable to my grounds and locality. I shall also continue experimenting and testing such novelties as I may be able to procure.

The Delaware is an entire failure with me. The plants I received as a present from Dr. Grant were the strongest and finest that could be found. They grew for several years most vigorously, but never bore a full crop. About four or five years ago, they made canes nearly three-quarters of an inch in diameter, and were much admired by those who saw them, among whom there was a number of professional vine-growers. Alas! the year in which they seemed to have reached an unusual degree of perfection was the turning-point. Although the wood ripened thoroughly, yet they were much feebler in the following year; they were worse in the next, until I am compelled to dig up those that are left and throw them away. The canes of them are now not thicker than a small goose-quill. Neither can I do anything with the numerous seedlings from the Delaware; they grow for a few years, then they dwindle away. Three years ago, I had one that was very vigorous and strong, so that I was in hopes it would bear the next season. Instead of that, its growth was very feeble, just like that of an

Anna of the same age; both died during the summer.

What I say of the Delaware, in my grounds, holds good in respect to those grown around here. The Delaware is not fit for this locality; it stands our winters, but not our summers. Whether it will do better on the root of the Clinton remains to be seen.

The Diana is very vigorous, but gave only once, in nine years, a good crop. It ripens every year three or four very small clusters, so that it is not worth growing.

The Rebecca is healthy, but a feeble grower on its own roots, bearing and ripening every year a few very diminutive clusters of most excellent quality. A Rebecca, inarched in a shoot of the Taylor, made a shoot, during the past summer, nineteen feet long, and as thick as my middle finger. It was inarched in the summer of 1866. The Anna I gave up last year.

Hartford Prolific is perfectly healthy, and bears full crops. I applied the ring to several shoots of it without the least perceptible influence on the clusters. They ripened neither earlier nor were they of larger size.

The Concord has, in my grounds, most curiously behaved. Three very vigorous vines gave me full crops but once. For 1865 they grew very well, and ripened their wood perfectly. For 1866 they did not grow at all, so that I thought they were dead. This was really the fact with one of them; the two others were alive, although they did not make any wood. For 1867 they grew again, not from the roots, but from the old wood, about a foot above the roots. The canes they have made bid fair to produce an abundance of fruit.

An Allen's Hybrid, which had borne every year, was loaded with most beautiful clusters, in 1866. When the berries had just commenced being translucent the plant died outright. Six other plants, in another exposure, are growing luxuriantly, but mildew so badly that I do not expect much of them.

Adirondac and Rogers' Hybrids, with hardly any exceptions, show very little mildew, but have not borne yet, save No. 43.

Union Village is doing exceedingly well, and ripens its fruit every year.

On the Creveling I saw, last summer (July 5), for the first time, the true Oidium Tuckeri. Not the leaves had been attacked, but small, imperfectly developed berries. It did, however, not spread, and a few berries ripened. The To-Kalon showed the same condition. I shall destroy it.

The Iona is, with me, a feeble grower; mildews, and did not ripen its fruit last fall. Grafted on the North America; it made a fine growth.

The Israella, after having grown prodigiously in 1865, did not show the least sign of life in 1866, but recovered in 1867, in the same, to me, inexplicable way as the Concord.

Miles grew and bore finely, but the berries, when nearly ripe, mildewed, so that they looked as if they had been dashed with flour. This made them intensely bitter to the taste. The same mildew spoiled also the fruit of a Hartford Prolific and of a Concord, shading the piazza of my house. These two vines did not ripen their wood.

Maxatawney bore several fine clusters, and ripened them perfectly. Very little mildew was visible on the leaves.

Taylor and Cuyahoga are not worth growing. York Madeira bore finely, but the fruit is only sweet, not aromatic.

The Herbemont died, three years ago, after having borne a few clusters of fine fruit. I had no success with two young plants I set out afterwards.

Lincoln is a most rampant grower, but a very shy bearer. Of the Lydia, Charlotte, and a number of others, I cannot say any thing yet, as the plants are not old enough to bear. Baldwin, Lenoir and Devereux are very healthy growers, but have not borne yet.

The Clinton bore abundantly, although its leaves were a little affected by mildew. It had never before any mildew on it.

The Alvey is my favorite. It grows rampantly, and bears, when not cut too short, an abundance of vinous, very refreshing fruit, without pulp, and with a very thin skin. It must be overripe to develop its fine qualities.

My black seedling, which I called the Jersey Black, did not mildew, and ripened a full crop of fruit to perfection.

Of the Weehawken I dare hardly say what truth obliges me to say, though every word will be corroborated by a large number of witnesses. The original vine, as well as several others, now three years old, and planted in different parts of my grounds, did equally well. They were not affected by mildew, and retained their foliage till the frost killed them. The wood ripened up to the extreme ends, even of the laterals. The bearing cane of the mother vine was three feet long, and ripened twenty-three most beautiful clusters. I cut this bearing cane off, with all the bunches on it, on the 16th of October, to exhibit it on the 17th, the day appointed for the grape-show. Unfortunately, the show was postponed for a week. I received the information on the 16th, an hour after I had cut and packed the cane. I sent it to New York on the 24th of October, but did not look at it, nor did I visit the exhibition; for, as it is an early grape, and was overripe when I cut the cane off, it was not difficult to imagine in what condition it was when it was taken out of the box, in which it had remained from the 16th to the 24th of October.

(*To be continued.*)

* * *

PEAR BLIGHT AGAIN.

BY S. S. COOKE, CHILLICOTHE, OHIO.

Another year's experience, Mr. Editor, enables me to come before your readers with some additional facts respecting this disease. In your March number, 1867, I gave my observations on a pear orchard of 500 trees during 1865 and 1866; and endeavored to call more general attention to the subject of blight. I am glad that the article met with notice from several gentlemen who have been observers of the disease, and drew from others views and theories worthy of notice also.

Blight in the pear usually appears during the growing season, and just after a fall of rain (or in damp weather), preceded by a drought of several weeks. A sporadic case occurs, however, in warm moist weather, when no drought has existed. The theory, therefor, concerning the cause of the disease, as suggested in my article, was that during the period of the drought, the functions of the tree are all unusually active in inhaling and absorbing moisture and nutriment to supply the wants of the tree, and that, while in this State, a rain-fall takes place, suddenly immersing the tree in a humid atmosphere, and the roots in wet ground, whereby the active vessels at once fill the tree with an excess of crude sap, gorging themselves until the walls of the vessels give way, and extravasation ensues. Incipient decomposition follows this functional derangement, and the sporules of fungi, every where present, seize upon the decomposing cambium, and settle the case with the patient in a day or two. Two agencies unite in producing the death, *physical derangement* and *fungus;* one an internal, and the other an external cause. This was the theory suggested in the article alluded to; being, in substance, that of Prof. Salisbury, of Cleveland.

Other theories have also been recently suggested; and among them the following:—Mr. Bennett, of Pittsburg, advocates the doctrine that *electricity* produces blight, and also mildew and rot in grapes. He thinks that lightning either explodes the sap vessels, or so heats the sap as to kill the tissues of the tree. Dr. Stayman, of Kansas, I think advanced the same idea in the *Horticulturist* some years ago. Mr. Feast, of Maryland, seems to endorse the same theory. Mr. Berckmans, of Georgia, while he thinks that blight follows rains, preceded by drought, which ruptures the *utricules* and vessels of the tree, inducing derangement, which, in turn, is followed by fungoid attacks, also advances the hypothesis that blight ordinarily only attacks trees or branches that are *bark bound;* and that a longitudinal incision with the knife through the bark of the part, or tree, so bound, will prevent an attack of blight. This remedy is laid down as entirely successful with him.

Thus much for theories; and next, as to facts. I regret to record that my experience in pear culture during the past season of 1867, has been a sad one. During 1865 and 1866 my neighbors in the Sciota valley, a mile east of me, suffered severely from blight, while I feel it but little. In the past year, however, my neighbors of the valley escaped, and the scourge fell heavily on my orchard. Whether the one theory or the other was correct as to the cause, made but little difference, as remedies all failed.

My note book must tell the story. About the 20th of April—following the advice of Professor Salisbury—I sprinkled over the roots of each *standard* tree in the orchard about one gallon of refuse gas-lime, and forked it under. This was done to counteract fungus through the summer. No *dwarf* trees were limed. April and May were cold and wet months. Some lightning occurred in the middle of May, but no blight.

June. First half of this month rather *wet* and *warm*; hard thunder shower on the 12th, followed by no blight; rains ceased on 14th, and *drought* began; between 20th and 30th, one light shower and warm days and nights—in which time lost 12 dwarfs and 1 standard tree by blight. No lightning last half of month.

July. Read Mr. Berckmans' theory and remedy, and on 5th made longitudinal incision from branches to roots on every *standard* tree in orchard. First 12 days of month dry, with cool nights and no blight; rain on 12th, followed by warm, moist weather for 4 or 5 days—in which lost 4 standard trees by blight. Last half of month cool nights, two small showers—dry—no blight, but mildew on grape leaves. No lightning this month. Drought most of month.

August. Heavy rain with thunder and lightning on 1st; same on 10th; on 13th showery, and some thunder; days and nights warm and moist for first 17 days of month, in which time lost 25 standard and 6 dwarf trees, by blight; from 21st to 26th one rain, warm and damp nights, in which lost 4 standards and 2 dwarfs by blight; on 27th cool nights and drought set in, blight ceased entirely and mildew on grape leaves commenced again. Total loss—34 standards and 20 dwarfs; being about 12 per cent. of the whole orchard.

Of the standards destroyed, 4 were feeble, 4 of medium vigor, and 26 of vigorous growth. Of the dwarfs, 8 were feeble, 5 medium, and 7 of strong growth. Of varieties, the Flemish Beauty suffered most; loosing 8 out of 10 very vigorous standard trees. Next, Beurre Easter. Next, Howell, Beurre d'Anjou, Beurre Diel, and d'Alencon. Such as suffered least were: Bartlett (12 standards, none affected), Beurre Clairgeau (none affected), Beurre Golden (none affected), Seckel (one affected out of 10), Howell (2 out of 5), and Bergamotte Codette. Only one dwarf Louise Bonne, out of 40 was lost; and one dwarf Doyenne, out of 20.

It should be noted, however, that a slight elevation or ridge, runs across the orchard a few rods from the south end. On this the Bartletts and L. Bonnes are situated. As this position is naturally a little better drained than further north, the slower and more healthy growth of the Bartletts may thus be accounted for. The northerly half of the orchard lies in a very slight depression, or basin, scarcely observable; and has a rather better soil. Rains, if heavy, incline slightly to flow toward this basin from all directions, and carry with them the richer elements of soil, or vegetable mould. Through the centre of the basin a good 3 foot secret drain is constructed, carrying off all surplus moisture. By far the greatest invasion of blight occurred in this northerly part; not less than three-fourths of the lost trees being situated there. Hence I infer the soil there to be too rich in vegetable matter. I now incline to the idea of removing all trees, in the coming spring, from this locality to a higher, poorer, and better drained piece of land. Trees growing within 4 feet of the drain referred to, blightly as badly as those 4 rods distant.

Now, what do the results aforesaid indicate? I think they tend to show that blight is: First, an atmospheric disease; and Secondly, that its foundation is functional derangement of some kind in the tree, produced by sudden changes from dry, to moist warm weather. Regular atmospheric states, whether wet, dry, warm, or cold, do not favor the disease. As to the *theories* before noticed, it may be remarked that the results reported, do not appear to sustain the one referring the cause of the disease to *electricity.* On some occasions we had blight following lightning; on others, we had lightning without blight; and on others, blight without lightning. A great fault with the electrical theory is, that sufficient facts and experiments are not adduced in its support. When these come to be presented, it may appear in a better light than at present. I think the facts reported also tend pretty strongly to negative the theory that *bark-bound* trees, or branches, are ordinarily the only subjects of blight, and that the disease is prevented by incising the bark. The fact that I lost 34 trees thus treated, removes all faith in the remedy, so far as I am concerned. None of the trees, so far as I could discern, were bark-bound.

As to the remedy tried in April last—the application of gas-lime upon the roots—something is also to be said. This, too, certainly failed as a remedy. Possibly the bleaching received by the lime, through several months exposure in the open atmosphere, before I got it, may have weakened or destroyed its remedial qualities. On the other hand, its fertilizing qualities very probably induced a more rapid and vigorous growth in the trees; and thus tended to bring on, rather than prevent, an attack of blight. Certain it is, that the loss of *standard* trees, compared with *dwarfs*, was out of all natural proportions. Hence, I incline to attribute the loss of many valuable trees to the effect produced by the gas-lime. Retarding, rather than invigorating, would seem a better course with pears in our soil.

Another fact is noticeable. When blight appeared in the pear trees, no mildew, or oidium, showed itself on the grape leaves in my vineyard. And when the leaves of the grapes were most affected by oidium, no blight appeared among the pears. Warm and moist nights, while they favored the blight, seemed to produce no mildew. On the other hand, cool and dry nights seemed to favor the spread of oidium and check that of blight. This would indicate the presence of different species of fungi in the two cases, which accords with the generally received opinion.

In conclusion, I will express no opinion as to the true cause, or causes, of pear blight—further than, that at present nothing has appeared to overturn what is known as the *fungus* theory. Whether fungus is an active *cause*, or only a *consequence* of the real disease, I can give no opinion of any moment. There are strong circumstances going to indicate that it is only a consequence of an abnormal condition of the tree, and that the real disease is some hours in advance of the parasite. Recently it has been intimated through the press, that this question, so far as it relates to oidium and grape rot, is receiving the consideration of several skillful pomologists and microscopists, whose results are to be given to the public. Such examination will necessarily go far, also, to settle the "vexed question" as to the origin of blight in the pear.

EDITORIAL.

HOW BARK IS FORMED.

We are reminded of some very curious observations by a note from a Philadelphia friend, published in the January number :

Ten years ago some young candidates for the penitentiary stripped a cherry tree of ours of its bark. This was about midsummer; next day we noticed that the edge of the medullary rays exuded a sappy substance, and the whole surface of the exposed wood was covered, as it were, with "pinhead" points of a gelatinous texture, about one-eighth of an inch apart. These processes continued to expand till in a few days they met each other, united in one homogenous mass, and very soon after, we forget exactly how many days, the whole surface was covered uniformly with a very thin brown cuticle. There were, however, a few small spots exposed to the full sun on the south of the tree, where the exudation burned off by the suns heat as fast as formed. No new bark covered them; and it was not until two years afterwards that the new bark closed in all around and covered these places.

A year or two afterwards we saw in the Autumn a very large apple tree, perhaps four feet round, that had the whole stem stripped sometime in the summer—why or for what, or the proprietor, or any circumstances connected with it, we do not know—only that a new bark had formed since—that season, completely covering the stem, and the tree growing with amazing vigor and health.

Two years ago, a ten year old tree of our own planting, of *Quercus discolor*, (swamp white oak), got its bark shattered; half way round the tree the bark was completely carried away; on the the other half it was loosened and hung down—that is, it hung longitudinally, not separated near the ground. Determined to save the tree if practicable, not having any trees of the kind, we resolved to sacrifice a nice tree of English oak. The bark was taken off, carefully cut and fitted so as to cover the exposed parts of the swamp white oak, the idea being to *graft* as it were the bark of the English oak so as to take the place of the natural bark. Its own loose piece of bark was set up in place, and the wound tied and bandaged securely by muslin. This was also about midsummer. The English oak bark died; and no new bark appeared under it. The trees own bark placed up against the place where it had been torn off, did not unite, but under it, between it and the wood, a *new bark* grew, just as we had seen in the case of the apple and cherry, and the tree is in perfect health now, although the part where no bark grew is not yet covered by the approaching sides of living bark. Why no bark formed as well under the English bark as well as under the trees own loose bark, we cannot tell; unless it be that the connection of the latter at the bottom preserved life through the whole range of living bark, and in the former having nothing to preserve life, decay commenced and communicated its decomposing influences to the exuding matter, destroying it also.

However, that is not the point here. The interest is in showing *how bark is made.* The outer cuticles of snakes and other skin shedding things we know is done as a comparatively

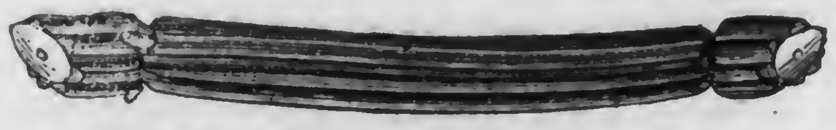
seasons, as we say of birds. Trees, we see, are in the same category ; they have their new bark seasons, when it soon commences, pours through the fissures between the woody fiber, and is soon over.

Another singular fact in reference to this matter is worthy of note. In the fall of the year. after growth had ceased, we cut out a block of the new cherry bark about an inch square, and we found the season's growth of wood and bark both equal, each about one-eighth of an inch thick. So that we may judge from this that the cherry, and perhaps other trees, expends as much of its energies annually on the bark as on the wood.

This question of bark starts many interesting thoughts. The "heart" wood of a tree is generally supposed to be dead wood; the sap wood living, and able to carry out operations of value to the tree. The bark is of the same character. Two or three year's growth is generally alive; others outside of this are dead and of no use, and in time the outermost fall off by the action of wind and weather. If there were no chance of falling off, the bark of a tree would be quite about as thick as the wood, the old rings of equal number on the extreme points of a central line.

How long bark remains alive is different in different trees. In many it is not easy to tell the living from the dead structure. In some it is very plain. In the common trumpet vine (*Tecoma radicans*), the dividing line is beautifully distinct ; the living bark embracing three years (we believe, for we are writing without notes of our observations).

Another singular thing about bark is what we call "rough bark." It begins at different ages in different trees, and is evidently of another nature to the mere cuticle, which forms the first stage of bark in the young shoots existence. In the Cherry, Birch, &c., the early bark peels off in vertical paper-like flakes around the circumference of the tree; but after a few years another substance bursts through longitudinally and forms irregular excrescences. In some trees like the Sweet Gum, and English Maple, (*Acer Campestre*), these longitudinal excrescences appear the first year, and thus are formed what we call "cork barked" trees, as in the accompanying illustration ; but the time when these appear is different in individuals of the same species. Some maples do not become corkey for several years ; while others are densely winged almost regularly as the young growth pushes. We also see Sweet Gums, some of them with a weird unearthly look, others polished as the most cultivated human could desire.



[SHOOT OF CORK-BARKED MAPLE.]

But, says Mr. Jack Matter-o-fact at our elbow, this is all very pretty and makes an interesting tale ; but a practical journal like the *Gardener's Monthly* should tell us how to make money, or give us some useful idea to turn to practical account in our every day operations. What is there in all this ? But we must first gain knowledge before we can possibly know whether it is worth anything or not. We can make no use of anything of which we know nothing ; and in this matter of bark, no doubt if we knew all about it, we could turn it to practical account in various ways.

For instance, we know already that trees sometimes suffer from indurated bark—get *hide bound* as it is technically termed—the cherry especially, and it has been the custom with Gardeners to cut through with a knife, all down the stem of the tree, which has often proved to be a partial remedy. But if we can find out the exact time of forming new bark, and how we can excorticate always and with safety, it would be much better still.

We hope some one will follow up these ideas. Our experimental farms and gardens, national and otherwise, ought to help us with these things.

DETERIORATION OF FRUIT ORCHARDS

It is perfectly clear to us, that the doctrines advanced by the *Gardener's Monthly*, that the cracking of the Pear is owing to a parasitic fungus, which does not necessarily imply a disease in the tree, must receive the assent of every intelligent fruit-grower. We are much pleased to note that already many of the leading men in the country have given their assent to this view; and the true theory once acknowledged, some remedy may be discovered, without which, all attempts to combat the enemy is like fighting in the dark.

Our English friends have not got so far in their general knowledge of fungoid diseases as American cultivators. In some respects they are farther advanced, particularly in the descriptive science of these minute plants. There is not any one in the world who stands so deservedly high in this as Rev. M. A. Berkeley. Yet we speedy operation. They have their "moulting" really think the practical value of Mr. Berkeley's labor is more apparent in the United States than in Europe. As our readers know, the Pear cracks as badly in some parts of Europe as here; yet, in all the discussions we read in European periodicals, no practical cultivator has any thing better to offer than arguments which have long lost their force here—"hot weather;" "hot suns after showers, &c." A leading contributor of one of the best English periodicals thinks it is a want of regular moisture at the root which causes it. He says:

"Beurre Diel, on the Quince, trained upright against a south brick wall, has never had a single cracked fruit. The tree is about seventeen years old, and bears freely and regularly. Easter Beurre, on the Quince, trained upright against a south stone wall, is now carrying its fourth crop, and it never has had a single fruit that has cracked. The trees against the south walls have not a single cracked fruit this year, and never have had their fruit injured in this way, simply, I believe, because, in hot and dry weather, they are always freely watered, and have their roots protected with straw."

One man, on the other hand, thinks it is the water which causes it. Another replies:

"No. A dry soil and a hot sun combined, scorch, dry, harden the tender skin of the fruit; as soon as rain falls the fruit swells, and the dry skin splits in every direction. The rain only develops the mischief which the dry soil and sun have effected."

To an American, accustomed to see the Pear growing over a tract of land thousands of miles broad; in wet soils and in dry ones; under places quite as protected as brick walls; and others exposed to arctic breezes, and bearing the same cracking disease in all—these little reasonings have long since had their day. But sometimes a writer will nearly stumble on the real cause of trouble, as the following shows. A writer in the *London Journal of Horticulture*, says:

"This spring, one of my Pear Trees, apparently in vigorous health, had a considerable number of its leaves affected with a sort of blister or fungus. The *Journal of Horticulture*, like a skilful physician, recommended the application of repeated doses of sulphur. This remedy was, to a certain extent, successful. I have seen large Pear Trees with every leaf and fruit horribly disfigured, year after year, by this disease. This leads me to suppose that doses of sulphur act only as a palliative, and that a more radical remedy must be tried. I fancy the tree has been sucking up some unwholesome juices, which have disagreed with it, and so spoilt its complexion. It must be carefully forked out of the ground about the 21st of this month, have its roots examined and somewhat shortened, and much of the old soil removed; and it will be planted again in a mixture of fresh earth, roasted and unroasted, and some old hotbed manure. I shall be much disappointed if this treatment does not effect a complete cure."

It does not seem to be understood there that this "blister or fungus" is the same fungus which attacks the fruit as well as the leaf, and that it is the destruction of the cuticle of the Pear in these "blistered spots" which causes the crack. The remedy is also readily reached. The spores of these deleterious fungi, with very little doubt, are drawn into the sap, through the roots, and germinate when they come to the surface of the leaf or fruit. Disturbing their operations, therefore, by moving away impregnated soil, and replacing by fresh, must be an advantage. The experiments of Dr. Hull, at Alton, Ill., conclusively show a benefit of this kind in stopping various forms of fungoid disease, the greater part of which, no doubt, originates in the same way.

Our main object in this article is to impress on our readers the almost certainty that this is the way the fruit trouble works: and that, in all their remedies, they have, first, to guard against the communication of fungoid spores with the roots; and, second, the destruction of leaves infested with fungi, before the spores for another crop have had time to mature, are the points to be kept in view.

It always takes time for the parasitic fungi to establish themselves. Hence, when a man starts fruit-growing in a new district, it is *always successful*. Fungi, however, gradually increase, and, in time, the new place becomes no better than the old. A man starts on a hill, ignorant or forgetting that other hills have fruit troubles; and, because he succeeds for a few years, the hill has all the credit. Or he starts near a lake, and "large bodies of water" are glorified. But, in time, the fungi get a foothold, and then the failure is pronounced "unaccountable." The following, from a correspondent of the New York Farmers' Club, presents the case exactly. The *Tribune* says:

"Where I was raised in Southwestern Ohio, I have known my father to frequently gather,

eighteen and twenty years ago, as high as forty bushels of apples from a single tree, and these of the most excellent varieties. In the same region now it would take nearly forty trees to produce one bushel. Apples had begun to decline there previous to 1850. In our own orchard the progress of disease was quite marked. It began in the centre of the orchard, on a Bellflower that had always given fine fruit. The Apples began to speck with a bitter rot, and fall off prematurely. Other trees were soon similarly affected, and finally the whole orchard."—C. H. MURREY, Clay City, Clay County, Southern Illinois.

There is no theory here, but a clear statement of facts. Change parasitic fungi for *disease*, and our readers will see the whole case clearly. We trust that, with the recognition of this principle, our friends will not let the next season go over without experimenting in this direction—the true one, we are sure, by which to unlock the talismanic gates which keep us out of successful fruit culture.

NOTES OF WESTERN TRAVEL.

Cincinnati with Horticulture has long been identified. It has had the advantage of a live Horticultural Society, and energetic, practical, common sense Horticulturists. Swann, Flagg, Longworth, Buchanan, Ernst, Warder, Graham, Neff, and other names that will readily suggest themselves to all but very young Horticulturists, have given Gardening the eminence it has here to-day. We are proud of the Art as it is developed about Philadelphia, New York, Boston, and Baltimore; but we know of no American city which in true taste, and a general diffusion of true taste, will compare with Cincinnati. This is perhaps the more remarkable, as we think more than in the cities named, a greater portion of the wealthy residents of this place have sprung from the masses of the people, in whom one would suppose the effort to accumulate wealth would have left little time for the cultivation of the finer feelings, so generally supposed to be the offspring of early education and abundant leisure.

Our first visit was to the Society then in session, presided over by Mr. Stomms, whom we found an intelligent and courteous gentleman, and very popular with the members generally, many of whom expressed themselves as in great hopes of a renewed interest in the Society by the people at large, under his management. The principal topic discussed on this occasion was, "Grape and Wine"—but if matters of taste, and more purely horticultural, are at times crowded out by these more commercial subjects, which partake as much of the agricultural and mechanical as the horticultural, it may be pardoned to a Society like this, which has done such good service in a genuine way.

The founding of the Cemetery—Spring Grove—by the early members of the Society, has had, it is evident, a strong influence on the fine taste we see everywhere about the town. It is admirably designed, and elegantly maintained. It is the very reverse of Greenwood, where art has done and does nothing, while nature lavished the materials. Here nature was simply pretty, but art has made her beautiful. Mr. Buchanan is president of the Cemetery; a gentleman, we need scarcely tell our readers, of taste with a thoroughly practical judgment.

The landscape gardener, who is employed regularly on the grounds is Mr. Strauche, a master as well as an enthusiastic lover of his art; for the sake of the art, as well as for the money which it brings.

The land embraced in the original plan was 167 acres in 1845. It now comprises 418. 16 acres are reserved expressly for a park, and is of course laid out on a more joyous scheme than would be appropriate were it part of the Cemetery proper. With rare public spirit, the originators had only the improvement of taste about them in view. It is not a business speculation. All the money made is devoted to further improvement plans, and maintaining what has been done in the best of order. In the Cemetery the remains of Longworth, Ernst, and other friends rest.

The mention of Longworth's name suggests the wine interest of this city. Though other laborers were not few, yet in many respects he was its founder and patron. This child of his foresight and energy, still receives fostering protection from his nephew, Captain Anderson, on whom has fallen the mantle of his uncle in untiring enterprise in affairs which may benefit his city. A visit to the wine house under his pilotage makes an interesting item in our Cincinnati recollections. He explained the difficulties Mr. Longworth encountered in the formation of the wine culture, and made it clear to us that no matter how good an idea may be, or how certain to succeed, it takes efforts of the most persistent kind to get the public to see and sustain it. Thousands of good ideas are no doubt lost to the public in every age, for want of Longworthian courage, to press and pursue them. Difficulties still existed. Among the worst ones was counterfeiting, now that the "Longworth" brand had become famous. *Lonsworth, Loncworth.* and many other mean things were very abundant, doing a double injury by the attempt to steal a name, and disgusting the public with pure American wine, of which they naturally suppose they have a genuine sample. It was a remarkable fact that much of this stuff was actually shipped from New York to Cincinnati, and used in some of the hotels as the genuine, on account of the greater profit resulting therefrom.

Another point we learned from Mr. Anderson was, that if American glass manufacturers would pursue improvement in the same spirit that Mr. Longworth did wine culture, their business might be immensely increased. Now champagne bottles have to be imported from Europe on account of the weakness of American made glass. During the process about 33 per cent. break,—while of English the per centage is never more than ten. In addition to its weakness the roughness of the mouth, interfering with proper corking, is against the American bottle. One would suppose there would be much loss of wine from this breakage, but it is collected and used for making brandy, although again it was difficult to compete with the cheap adulterated stuff common in the markets. If one wants to understand the full force of the scripture text about the folly of putting new wine into old bottles, a visit to an establishment like this will be of service. In order to lessen the loss of wine before referred to, there is a machine for testing bottles in advance. A nozzle is attached to the mouth, and a pressure equal to twenty atmospheres forced in. The weak ones of course give way. Now it is found that a bottle that will resist twenty-one atmospheres will break at eighteen next, and so in proportion every trial afterwards.

Another point of interest to us was the fact of wines of varying qualities being drawn from the same cask. If a 500 gallon cask were drawn off at the same hour, and five one hundred gallon casks filled with the same contents, in time an experienced taster will find all five casks differing in flavor. To an uneducated taste no difference would be perceptible, but for connoiseurs these differences had to be noted, and marked accordingly.

The capacity of this wine cellar was for about 300,000 gallons, but only about 200,000 were there at that time.

We might fill a whole number with matters which interested us here; but, restricted for space we have endeavored to give only those which we think may be new to most of our readers.

Cincinnati was rejoicing in a good wine crop this season. There were plenty of failures, very evidently from exhausted vitality during past years, and from a great variety ot causes; but healthy vines were numerous, and bore correspondingly fine crops. At Mr. Buchanan's we saw a very fine Catawba vineyard, about twenty years old, in which there had been but three total failures, and during the seventeen years of bearing there had borne an average production of 250 gallons of wine per acre per annum. We could not see that the Catawba had failed much more than it ever did, and left Cincinnati in no strong faith in the degeneracy of Grape varieties.

We found much interest manifested here in the Ives' Seedling. Everywhere it was popular with wine men, and all we saw were bearing abundant crops, with fruit quite equal in eating qualities to Concord. The vines were of the same vigorous character as Concord, Hartford Prolific, and others of that class. It makes a dark wine similar to Norton's Virginia. It was worth $4 per gallon, while Catawba and others were not bringing perhaps one-fourth,—but this, as Mr. Anderson well remarked, was as much owing to the demand arising from curiosity to try a wine so widely spoken of as from its real merits, great as these certainly are. At Mr. Mottier's we noticed the Delaware doing very well. They had given it extra rich soil to what other varieties had; but some of our party did not think it necessary. Single vines of Iona, Maxatawney, and others trained against a south wall, had also borne this year a few bunches with good promise. In Mr. Mottier's cellar our party found much to praise in the excellence of the Delaware wines, and other brands,—and the purity of article was well attested by the fact that after again adjourning to the vineyards none of the party, no matter how enthusiastically they may have felt called on to praise the wines, but were sufficiently awake to see the immense damage done to the crop by the grasshoppers—leafless plants, with the bunches cut off as if by the best grape scissors, laid around loose in every direction.

We visited Col. Waring's and many other vineyards, under the pilotage of Messrs. McCullough, Heaver, and Pentland, who are amongst

others conspicuous in the good work of maintaining for the citizens of Cincinnati the Grape reputation of their town.

PEAR BLIGHT.

We have so often shown good reasons for the faith that is in us, that the fire blight is the result of a microscopic fungus, and that it is not necessary that the tree should be previously diseased in order that the fungus should grow as it does, that we have given up arguing the matter, and have contented with letting our correspondents report their various experiences, in the belief the contradictory results of various theories would alone be sufficient to destroy them. In our present number a correspondent contributes a very valuable paper of this kind, showing that what we have pointed out as consequences of certain lines ot argument, are practically correct.

The "electrical" theory for instance, which, aside from the fact that thunder and lightning is not *electricity*, is evidently at fault from the simple fact that that little understood agent has thundered in districts years before any pear blight appears, is set at rest conclusively by Mr. Cooke's showing that his trees went through the ordeal unscathed.

All arguments deduced from "rain-fall," "drought," "wet soil," "dry soil," "miasma," &c., falls to the ground for *precisely the same reason.* "Varieties," "standards or dwarfs," "modes of propagation," and all that class of arguments, the contradictory evidence kills of itself.

We repeat, that we have seen no evidence to dispute our theory that the fire blight is the result of the growth of a parasitic fungus, the seeds of which float in the atmosphere, attach themselves to the bark, without inquiry whether the bark is diseased or not, germinate, and by pushing their thready roots through the tissue, destroy it, going round the circumference of the place for a few inches wide—girdling the branch in fact, and thus killing it.

This theory one can carry through all the experiences of all our correspondents given since the *Gardener's Monthly* started, without any circumstances narrated by them to contradict it. All other theories upset one another.

This being admitted as the true explanation, what is the remedy? Simply attack the little fellow directly in front. Stop him from going ahead just where he likes. Watch for his first approach, and cut away and burn the parts infected before it has time to re-produce spores to propagate the species, which is the last thing it does. After it gets into a district it may be years before we get it out, and probably never entirely, unless all the neighbors zealously co-operate,—therefore in districts where it is not known, carefully watch for its first appearance and *nip it in the bud.*

In reference to the *oidium* mentioned by our correspondent, he is laboring under a misapprehension common to many intelligent men who have accepted an idea without examination. No specimen, we believe, has ever been found in the United States, until the single instance reported by "Horticola" in our pages of this month.

TOMATOES ON WALLS AND FENCES.

A paper in our issue this month, by L. B., under whose initials the members of the Pennsylvania Horticultural Society will discover one of their most intelligent amateur associates, demands more than a passing notice. The great error of many amateur gardeners is that they follow in the wake of the mere market man whose whole object is the "maximum of *money* from the minimum of expense." The amateur gardener consults the pleasure of gardening, as well as its profits, and in many cases finds, as L. B. has done, that pleasure is often profit also.

The Tomatoes, well ripened by this plan, keep longer than they possibly can by the usual smothering process of growing them. We have to-day (Jan. 14th) enjoyed a delightful dish of these Tomatoes, being one-half of our friend's "last pickings" from the vines first hung up in his cellar, and no one would want to taste the best canned fruit, if he could only always get fresh ones like unto these. Any citizen, whose garden consists of only *a wall*, may have Tomatoes as L. B. has had.

THE SPADE OR THE DIGGING FORK.

We are very much surprised, notwithstanding all we have written on the subject, to find so many people sweating away at digging with a spade when in nine cases out of ten the digging fork will do four times the work in the same time, with inexpressibly less labor. It is scarcely necessary to say that the people we see so barbarous are not our readers, but even "our own" people do not seem to know that a four tined fork is much better than a five tined one.

RHODODENDRONS.

We have repeatedly called our readers' attention to these beautiful plants, so easily grown, when we know how, and this knowledge so easily acquired. As this is the season to prepare beds, we copy a paragraph from page 146, of our 9th volume:

A few words on their cultivation may encourage their culture, which is much more easy than people generally have the least idea. An impression prevails that they must have *shade*. This is a great mistake, they do better in the sun than anywhere, all inferences drawn from "nature" notwithstanding. But it is essential that the soil should be *cool;* that is, one that will not *bake*. In this they cannot be grown at all. To have this cool Rhododendron soil, the materials are in every garden, in the shape of trimmings and prunings of trees. Let these be collected together in the Winter and Spring; and, to make the bed, throw out the natural soil two feet deep, and throw in the branches, mixing the natural soil with the material as the branches are thrown in, and the whole rammed in well as the filling proceeds, raise the bed above the surrounding soil enough to allow for sinking as the branches rot, and then plant the Rhododendrons.

We may add that our plan of "mixing" is to put in about two inches of clippings, then two inches of soil, then more clippings, more soil and so on till the bed is full.

We are pleased to learn that since Parsons & Co. have succeeded in raising them as cheap as importations can be made, many other American nurserymen are giving the tribe their attention.

SCRAPS AND QUERIES.

TEN GRAPES FOR MARKET—*G. F. R., Toms River, N. J.*—Will you please inform me through the columns of your able magazine what ten varieties of grapes in the order of preference you would advise me to plant for market. Lat. 40°. The soil an open rolling clay loam, with sandstone debris intermixed. And also what mode of pruning you prefer ?

I wish you would give a good article on grape culture, as there are so many conflicting statements in the books and papers that it is hard to decide what is best.

[It is not possible to answer this question as we think our correspondent would desire. If one who would market fruit is a *pushing* man, he can soon make the newer varieties take,—but the mass of the public are slow to learn the names of fruits, and when once they get them by heart will ask for them long after the progressive have found out the best sorts. Hence there is yet a good demand for Isabellas and half ripe Catawbas, and one who expects to sell only what is asked for, should have some of these if his location is favorable to their growth. Then you may have Hartford Prolific, Concord. Delaware, Clinton, Creveling. Diana, Rogers' 15, and Northern Muscadine, which in spite of its inferior quality, you will find a profitable grape to grow. Ives, all we have seen of it, may also be profitable.]

CANADA THISTLE IN THE WEST.—Since Prof. Thurber's connection with the *American Agriculturist*, it is not easy to catch it asleep on its botany. Recently, however, it sounded the tocsin, scaring the western farmers into a belief that the Canada thistle was every where West, all along the lines of railroad. The Editor had been along and he had seen it. This must have been an associate, and some delightful music must have shut up the Professor's argusian eyes, that he did'nt see the error. The *Cirsium altissimum*, or tall thistle, a harmless and beautiful plant, was no doubt the species seen. We keep a sharp lookout for such things, and did'nt see one in a ride of twenty-five hundred miles. However the article will do good in setting the Westerners to look after the real vile thing, should he ever come amongst them.

AN IMPROVED KALMIA LATIFOLIA.—*C. J. P., South Framingham, Mass.*, sends a dried flower of a seedling Kalmia latifolia, and asks : "Have you ever seen one like it—no one in this section has ?"

It is White with a distinctly marked crimson edge and beautiful.

PROPAGATING EVERGREENS FROM CUTTINGS.—"*Subscriber*," *Zanesville, O*, says : He wants to propagate evergreens this winter, and what is the best varieties to experiment with, and the temperature?" About 55° to 65° or 70° will do, kinds in the order named strike the easiest : Heath-leaved Arborvitæ, Heath-leaved Cypress, Junipers, Golden Arborvitæ, American Arborvitæ, Yews, Cupressus Lawsoniana, Thujopsis borealis—then Spruces and Pines are very bad. Larches we have never known root.

GRAFTING CONIFERS.—*S. S.J., Cincinnati, O.*—Can you tell me the French or any other mode of grafting Evergreens?

[The French have a way of grafting in the open air by drawing away the earth from a seedling stock, planting a cutting of the desired kind closely against it, *then inarching*, waxing in the usual way, and then filling up the earth again.]

PROPAGATING SALISBURIA.—*J. B., Battle Creek Mich.*—Herewith I send you a leaf of a shrubby tree which you will please to name, and also tell us how to propagate it.

[Salisburia adiantifolia, the Ginko or Maiden Hair tree. It is propagated by layers, or by cuttings taken off in the fall and kept in propagating houses, but only by experienced propagators,or by seeds which are now to be procured from France.]

SUMMER PRUNING GRAPE VINES.—Mr. Griffiths, in an interesting chapter on the Grape in the *Country Gentleman*, says tradition ascribes the first adoption of severe summer pruning of the vine to Noah. Our friend is in error. The true history of this barbarous system has been traced to *an ass.*

NAMES OF PLANTS.—*Mrs. E. F., Waltham, Mass.*, sent us some ferns with which we were not familiar, and do not find in our collections to hand. The pieces are too small to hunt up from botanical treatises, but if the lady will send us entire fronds, we will try to name them for her. They are both 2 and 3 evidently *Athyriums* of different species. No. 1, is *Tradescantia geniculata.*

POMEGRANATE WON'T BLOOM—says "Zetta" "why won't it ?" Perhaps she has it in too much shade. It does'nt like that. Give it rich soil, plenty of water when growing, and plenty of sunlight in the open air all summer, and the surliest specimen will smile with blossoms before it is four years old.

THE NURSERY OF THE LATE ISAAC PULLEN.—We are gratified to learn that this fine establishment is to be continued by Mr. Thos. J. Pullen, son of the late proprietor. As Junior partner in the late firm he is well known as a worthy representative of that intelligence and honor which made his father so much respected. He has our best wishes.

PRUNING TREES AT TRANSPLANTING.—Our intelligent correspondent, *Dr. Stayman*, of *Kansas*, says : "Last spring I had 400 Apple trees transplanted, five years old, many of them were two inches in diameter and more than 12 feet in height, (40 trees making a two horse load), not a limb or twig was cut off or shortened except on a few done in the nursery for another party. They were set on a new piece of land on the highest elevation, exposed to the full rays of the sun and prevailing winds, and only four died, which were defective trees. They were taken up and set out by inexperienced hands by my directions ; no finer looking trees can be found any where. Another party got 100 trees and set them out according to my directions, and did not lose any. He came back this fall and said he wanted more of those trees "not pruned at all." My nearest neighbor planted out about 200 not "cutting back to balance the roots," but thining out a little to suit his fancy with excellent success, now thinks trees ought not to be pruned or cut in when transplanted, but thinned out a little if too thick.

[As an *abstract principle*, there is no doubt pruning weakens vitality. Another *abstract principle*, equally true, is, that *the branches evaporate moisture*, and that *the roots must supply the waste.*

Very rarely is a tree taken up and transplanted in such a way as to give the roots a very fair chance to do its duty to the branches ; and as to "dry up" is a more immediate evil than a "weakened vitality," we keep our eye on it in transplanting, and recommend pruning as a sure check to evaporation. The formula is thus :—"He who can transplant successfully with pruning, doeth well ; but he who can do without it like Dr. Stayman, doeth better."]

HARDY ORNAMENTAL DWARF SHRUBS—"*Greenwood Cemetery*," New York,asks: "Would you kindly let me know (among yours replies to correspondents), the names of some '*Hardy Ornamental Dwarf Shrubs,' that will flower from May to October*, and that will not require replanting every year."

[Spiræa prunifolia, Flowering almond, Spiræa Reevesii, Forsythia Viridissima, Deutzia gracilis, Weigelia rosea, Pyrus japonica, Calycanthus Floridus, Philadelphus coronarius, Persian Lilac, Itea Virginica, Azaleas the hardy varieties of course. Hydrangea quercifolia, Deutzia crenata, Ribes Missouriensis, Spiræa tomentosa, S. Billardii, S. Douglassii, Hypericum prolificum, Colutea arborescens, Vitex agnus castis, Clethra alnifolia—these flower somewhere near in the order named, and grow from two to five feet when full grown.]

Discovery of a Japan Plant in the South.—The bringing of the *Lespedeza striata* before the public by Mr. Ravenal of Aiken, South Carolina, has caused some speculation as to how it got in the South. When there is frequent commercial intercourse between one country and another, it is easy to understand how seeds may come in ballast and other ways. But we have but little chance of this between the South and China. Professor Porter having told us he thought he had gathered specimens in the South 20 years ago, we made some suggestions to Mr. Ravenal that it might have migrated eastward from little explored localities. His replies to our points are interesting, he says:

" I think there is no doubt whatever of Lespedeza striata being an introduced plant.

1st. It has all the habits of one,—confined to wood-sides, farms and settlements. It is only found where man and animals have been, and is not seen in the deep uncleared forests.

2d. It was certainly unknown to the earlier botanists of this country—Walter, Elliott McBride, Pursh, Michaux, Nuttall, never knew it—even Darby and Chapman have not inserted it in their Floras.

I found it about 15 or 16 years ago in two or three localities in the lower country sparingly disseminated. Now (as I saw in my late visit in October), it is all over the country, where formerly I saw but little.

3d. It is exactly the species which Thunburg described in his Flora Japonica, (1784) as *Hedgysanum striatum*, and afterwards Hooker and Arnott described as *Lespedeza striata*, among the collections of Beechey's voyage. I have specimens from Hong Kong sent to me by Professor Gray, which is just our plant.

Propagating Calycanthus. — "Zetta" says: What is the matter, my Calycanthus Floridus won't root its layers right off when pegged down?

[They never would layer. To propagate it, cut up the strong roots, and plant like currant cuttings, only pushing the tops down to the level of the earth.]

Prospect in Wilmington, Ill.—*R. W. W.* says: Winter so far splendid, Thermometer touched zero but once. But little fall plowing done on account of drought. Water a scarce article in some places. Corn, oats and wheat plump and No. 1—but yield rather light. Pork and beef plenty and low, considering the price of corn. Oats, 50 cts.; corn, 75 cts.; wheat, $1 50 to $1 80.; dressed hogs, $6 50 to $7 00,; beef, 7½ to 8 cts. dressed. Codlin moth ruined our apple crop. Grape crop heavy, splendid; Concord and Delaware take the lead. Many anticipate planting largely of grapes and other small fruits in spring.

The Tomato Question.—There appears to be a determination on the part of some of your correspondents to decry the Tilden Tomato as unworthy of cultivation. Now, as far as my experience, and that of some of our most successful market gardeners in this vicinity go, there is no Tomato now before the public that can be grown for a general crop with more profit than the Tilden. I consider it to be all that Mr. Tilden claims for it: viz, early, (not extra early), good size, smooth, solid, and remarkably productive. The experience of such growers as A. W. Harrison, A. L. Felton, and others whom I could name, who have grown and intend to grow it largely this season, I consider of more value than that of dozens of amateurs and professionals, who may have experimented with a single paper of seed, procured probably from some doubtful source, (as I believe large quantities of spurious seed were sold under the name of the Tilden). I will give one instance: In the autumn of 1866, Mr. Robbins, of the well-known firm of Johnson, Robbins & Co., extensive seed-growers of Wethersfield, Conn., when in this city, saw the specimens of Tilden Tomato on exhibition at my store, he remarked, how beautiful! Why they are an entirely different Tomato from what I have been growing from the Tilden. He then obtained some seed from me, and in a conversation with him recently, stated it was the finest Tomato they had ever grown. A correspondent in Hamilton, Ohio, writes, "the Tilden which I have grown from seed, obtained from you, is the finest Tomato in our market, and sells at 10 cents per half-peck more than my neighbors."

And now a few words about "The Cook's favorite." Your correspondent, J. R. S., says it is "worthless hollow sort." Now it is just the reverse, being one of the most solid varieties grown, it was never offered as an *Extra* early sort, but I believe very few of the so-called early varieties can excel it even in this particular; and for planting out late (here about 1st July), *there is no Tomato to equal it*, for quality or productiveness; there is no variety that ripens so well in the autumn, nor of which the green fruit can be picked (before frost) and ripened under glass as well. For this purpose it is extensively grown in New Jersey. As to Keyes' Early Prolific I find it no earlier than our old Early sort, and not so desirable, as the fruit is smaller. I shall, however, give it another trial.—H. A. Dreer, Philadelphia.

Ten Acres Enough.—The *Vineland Weekly* says: "When Mr. Morris published his work, it seemed to set the country on fire; mechanics, merchants, clerks, were seized with a furor for the purchase of "Ten Acres." Something like 150 of the "Ten Acre" Boulevard lots were sold at once under the stimulant of the ideas contained in this book." It would be very interesting to know whether these gentlemen have realized the profit they had a right to expect after reading this work. We make this suggestion not out of any desire to depreciate Mr. Morris' book; but solely with the view of learning how near practical results will come to theoretical writings.

Penn. or Tenn.—We have just received a package of letters, some of them two months old, which, directed to us, have been lying in Tennessee, many postmasters not noting the difference between T and P. This is especially bad for us, as, there being a Germantown in that tate, the error is not immediately detected. We would suggest to our correspondents to use Pa. instead of Penn. for this State, as less liable to be mistaken for Tenn.

Almonds.—*Mr. E. Manning, Harrisburg, O.*, sends us a few of the Hardshell variety, grown by himself. It is strange this fruit is not more grown, as it is an useful aid to sociability in an old-fashioned winter evening party.

Kentucky Nurserymen.—A few months ago we hastily penned a list of Kentucky Nurserymen in reply to a correspondent. J. Dunlop, of Pulaski, and Manson & Willey, Murfreesboro, should have been Tennessee instead of Kentucky.

A California Esculent.—*R. D.* says:—"While in California on several occasions, I had to eat some boiled roots which I thought good eating, and on inquiry had a plant pointed out to me of a trailing character, with pinky flowers, sweet-scented, something in habit like a Verbena. Can you from this description give me its name? I should like to try and introduce it East."

[We do not know unless it be *Abronia fragrans.* The roots of some of the species are fleshy, and may be "good eating." Callirhoe also has edible roots, but it does not suit our correspondent's description.]

Publishing and Editing the Monthly.—Correspondents frequently address Mr. Meehan on matters connected with advertising, or other *business* of the paper. He is happy to accommodate by handing all such to the publisher; but as he resides in Germantown, and not in Philadelphia, where the office of *The Monthly* is, it frequently occasions delay when time is important. Several advertisements are too late this month in consequence.

Double Glazing.—*D. N. W., Sewickley, Pa.*, says: "Finding great trouble with shutters, I adopted the plan of using double glass on one of my houses, and find that it answers every purpose. The inside glass is about six inches from the outside, and is carried half-way up the roof of a lean-to house, which is high enough. The ends are filled throughout with double glass. It is cheaper than shutters, and gives no trouble, and protects plants better."

Trailing Michigan Juniper.—*R. D., Waukegan, Ills.*, says:—"I send you samples of a Trailing Juniper or Savin, that grows on the shore of Lake Michigan, in our city. It grows in the *blowing* sand, and it seems to have to fight hard to live even there, for the sand drifts over it, but it shoots up and layers itself after the lower branches are covered, till it eventually forms a large mound, nearly or quite round, and of as beautiful a green as can well be imagined. 1,000 rooted layers could readily be taken from a single mound. I have never cultivated it excepting a few plants the last two years, and think it would make a very nice edging for garden walks here where the Box will not stand the winter.

[This is Juniperus Virginiana prostrata, a curious variety of the Red cedar, and well worthy of introducing to cultivation.]

Pear on the Mountain Ash.—An Illinois correspondent says:—"I send you two or three Pear trees of two or three varieties, that were root-grafted last winter on one year European Mountain Ash stocks. They were dug at random and not selected out, and were sent you to show that they form an almost perfect union with the Mountain Ash Stock; indeed, the union seems as good as with Pear on Pear. You will recollect I wrote you and got a favorable opinion from you about a year ago, "on the Mountain Ash as a Stock for Dwarfs where the Angers Quince Stock will not stand the winter." I have a Pear tree that has stood fifteen years on European Mountain Ash roots and seems to do well, and bore a fine crop of Bartletts this season. One of my neighbors has a tree, planted about the same time, that fruited well this season, and it has thrown up one or two suckers of Mountain Ash almost every year since planted. We grafted only a few trees for experiment."

[They are equal to the best Quince Stock Pears.]

Shepherdia and Silver Thorn.—An Illinois correspondent says:—"One of our Illinois Nurseryman told me last week that my Shepherdia or Buffalo Berry is the Silver Thorn. Is this so?"

[The Silver Thorn is *Eleagnus parvifolius*, or, in some catalogues, *E. reflexus* The Buffalo Berry is *Shepherdia argentea*. Both belong to the same natural order, and both with the same general aspect.]

OBITUARY.

ISAAC PULLEN, HIGHTSTOWN, N. J.

The death of **Isaac Pullen**, which occurred on the 13th of December last, ought not to be permitted to pass without some word of comment in the Horticultural journals. Mr. Pullen was an earnest friend of our cause, and, in some respects, a representative American. The writer of this notice is unacquainted with his early history, and has only known him in his maturity, during the last ten or twelve years. His age, at the time of his decease, was sixty-two.

The chief point in the achievements of his life life, was his success in orchard-house culture. He was, perhaps, the only man in America who has ever fully conquered the difficulties of growing Peaches under glass, at a profit, on the Rivers' plan, as a specialty, in a large house solely devoted to that purpose. Mr. Pullen was, for many years, a Peach-grower and a propagator of Peach Trees, and was, naturally, attracted to the project of growing this fruit in the orchard-house. He was not, however, a strict disciple of Mr. Rivers, but rather originated a system of culture for himself, in which he was eminently successful. The fine fruit produced in his house, and furnished to the public by the leading fruit-dealers of Philadelphia and New York, in the month of May, for several years past, will be long remembered. The writer calls to mind a delicious dessert of Peaches and cream at the Pullen mansion, in early June, at which time three or four dozen of Hale's Early were sacrificed on the altar of friendship.

We have styled Mr. Pullen "a representative American." He was a representative of the irrepressible man of this nation and this age.

He was tall, broadly built, angular, gaunt, sallow (for many years an invalid, full of chronic ills), of an active, nervous temperament, ambitious, hopeful, enterprising, even in the midst of disaster. He was exceedingly ingenious and practical, and yet was broad and comprehensive in his plans, and had an overmastering will, which conquered men and obstacles alike by its imperious force. His early education had evidently been neglected, so far as the teachings of the schools are concerned; but he had learned by intuition, from the Book of Nature, and from often reading and observation, so that his philosophy of men and things was most shrewd and instructive. His business adventures were widely extended, and almost always successful. Hence, although he spent much in what might be called experiments, he came out at last comparatively rich in lands and other substantial means, besides giving his children the benefit of a first-class education.

The homestead which he occupied was a representative American home—a fine, large mansion, built, painted and decorated with taste. The front yard ornamented with choice Evergreens and rare deciduous trees; on one side a fruit-garden, filled with choice Pears, Grape Vines, Strawberry beds, &c.; in the rear a hothouse for exotic Grapes; beyond an orchard-house, the most successful one in America; long ranges of offices, sheds and workshops are seen; a large barn, with a fine stock of Durham cattle; further back, poultry and other stock; and, beyond all, an orchard and a park, containing a herd of deer, which fed from the hand that is now at rest. Far away in the distance are other orchards, vineyards and acres of small fruits and vines; and yet other farms and orchards, twenty miles off, were owned by the same master who has presided here.

Yet this man was evidently an uneducated American, who started in life with only native force of character, energy and ambition for his patrimony. We need no one to tell his early history. It was written in the deep, nervous lines of his face, in his restless eye, in his worn-out body, prematurely ruined by brain-fag and hard work. Geologists pretend to read the history of former ages by the fossil marks on the rocks; the story is not half so plain as the history which man impresses upon himself in his passage through this world.

But Mr. Pullen was not an austere man. Far from it; his voice was cheerful and cordial; his manner earnest but bland; and he was a good listener as well as a good talker. At his house, and at his table, the most generous hospitality prevailed, and the social element was predominant. In sentiment he was a liberal Christian, an ardent friend of liberty, and a firm believer in the inestimable value of the American Union. As a Horticulturist he attained much eminence, and was widely known, having raised many seedling fruits and contributed no little to the sum of our knowledge. He was, essentially, a good man; and while, according to modern philosophy, his soul is now "but a little way above our heads," we, who have so much enjoyed his society in this earthly sphere, cannot refrain from saying a good word to his memory, and wishing him a happy future in his progressive state above.—J. S. H.

Death of R. A. Alexander.—We see by our exchanges that this distinguished Agriculturist and Horticulturist died recently at his beautiful farm, at Woodburn, in Kentucky.

BOOKS, CATALOGUES, &C.

Report of the Department of Agriculture for 1866.—It is to be regretted that this fine volume comes out so long after date. The able report of the statician, Mr. Dodge, is thus rendered of little value, except as matter for reference. The articles exhibit a high order of excellence, and do credit to the intellect of American agriculture.

Admirable as they are we must repeat what we have said before, that the publication of "good papers on agriculture" should not be the chief object of a government work of this character. Our energetic agricultural journals can and do successfully compete with the government in this line. The aim should be to do what these cannot, and besides to give us the results of the de-

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partmental operations. Of this last we are given very little, "34,000 plants of grapes, currants, strawberries and raspberries," with some hundreds of thousands of packages have been distributed of seeds, but nothing is reported of the results of this free sowing and planting.

The present Commissioner, Capron, is making some good reforms. The common seeds will, we understand, be no longer distributed; but anything rare, and not likely to be in the trade, should be collected, and as widely distributed as possible; yet only on condition that those who receive them report back to the department the results of their experiments with the articles they have received; or that they return to the department some equivalent in the shape of other plants or seeds for distribution, to entitle them to the favors of the public garden.

The publication of such reports would have a national value—now they are simply on a par with the transactions of a respectable agricultural society—useful in their way, but not what we should expect from a powerful government.

Illustrated Catalogues are getting to be a distinguished feature with our enterprising seedsmen. Europe cannot produce anything to match the beautiful catalogues of Vick, Hovey and Dreer, now before us. They must enjoy largely the confidence of the community to afford such expensive catalogues for their customers.

NEW AND RARE PLANTS.

Myrtus Cheken.—*Bot. Mag.*—Myrtaceæ. A pretty evergreen greenhouse or half-hardy shrub, much branched and densely leafy, the leaves small, closely set, oblong-ovate, obtuse, and the flowers numerous, white, seated in the leaf axils. Native of Chili. Flowered at Kew.

Magnolia Lennei.—*Florre des Serres.*—A cross-bred between Yulan and Purpurea, and named after the Director-general of the royal gardens of Prussia. Flowers pale rose, edged with white.

Begonia garanioides.—*Bot. Mag.*—This pretty species has been obtained from Natal by Messrs. Backhouse & Son, of York. It is well adapted for greenhouse culture; the large orbicular leaves form a tuft at the base, from amidst which several scapes arise, bearing many nodding white flowers an inch in diameter.

New Philadelphuses.—The French gardens put within our reach two new kinds of Philadelphus—P. Keteleerii and P. tomentosus, both said to be acquisitions; the first described as having semi-double or nearly double flowers, the last having flowers two-and-a-half inches in diameter, both moreover being white-flowered and sweet-scented.—*Gardener's Weekly.*

Retinospora Pisifera Aurea.—A golden variety, and one of the handsomest Japanese Conifers. It is of dense habit, and rendered most peculiarly striking and ornamental by its exquisitely fine feathery foliage, and the bright golden hue of its young shoots.

It is in the collection of Mr. F. Parkman, at Boston.

Rhyncospermum Jasminoides Variegata.—This being a variety of the well-known greenhouse climber, *Rhyncospermum Jasminoides*, little or no description is necessary.

Added to the lovely sweet flowers of the original species, this plant possesses the advantage of having distinct and striking variegated foliage, each leaf being marbled and blotched with pure white.

Thujopsis Standishii.—This fine hardy Coniferous tree is apparently midway between a Thujopsis and an Arborvitæ. The most striking feature is the singular beauty of its pendulous habit, which when seen on a plant only a few feet high, renders it exceedingly handsome. It was from Japan by Mr. J. G. Veitch.

English works describe the following:

Ulmus Aurea Rosseelsi.—This elegant and gorgeous tree is one of the richest lawn gems that this age of novelties has produced. The foliage is of the richest *bronzed gold*, which is increased in brilliancy by the fullest exposure to the sun.

Prunus Mahaleb Foliis Argenteis Marginatis.—A beautiful silver variegated form of Prunus Mahaleb, rivalling in effect the elegant Cornus mascula variegata.

Magnolia Lenne.—The flowers of this fine Magnolia are very large, and of great substance; color, rich bright purple. Habit vigorous. Forms a fine mass on lawns. The best of all the hydrids.

Lilac, Ville de Troyes, (Baltet freres Troyes, 1867).—A splendid new Lilac, now offered for the first time. The trusses are very large, and of the deepest purple, and produce a fine effect. Vigorous and very flowering.

Fraxinus Excelsior Cucullatus (Baltet freres Troyes, 1867.)—This very curious and very ornamental Ash is now offered for the first time. It is of vigorous growth, and the peculiar hooding of the leaves presents a singular and striking aspect.

Viola Lutea (*Yellow-flowered Violets.*)—Habit dwarf yet vigorous, foliage dark glossy green, flowers bright yellow, which are produced in great profusion all through the early Spring, Summer and Autumn months. The plant does not grow more than 5 inches high; it is perfectly hardy, therefore well adapted for small beds, edgings, or marginal lines. It is without doubt the best yellow-flowered bedding plant in cultivation. It was spoken very highly of in the leading article of the *Gardener's Chronicle*, November 2. It is bright yellow, of the most compact habit, and seems to flower more freely than V. cornuta.

DOMESTIC INTELLIGENCE.

Making Turpentine.—The long leaf pine is the only one of the species valued for its Turpentine, Lumber, Timber, Tar or Rails. The short leaf, or Spruce Rosemary, are of little value for anything, except for firewood. It is used extensively for fuel on railroads. In the first place, boxes are cut in the months of January and February, from one to three *inches* from the ground. These boxes will average one quart—some more or some less—owing to the size of the pine. I have seen as many as twelve boxes in one tree. A good hand will cut from one hundred to one hundred and twenty-five per day. The price of cutting ranges from one to two cents per box. After the boxes have been cut, nothing more is then done until the sap begins to ascend, when oblique notches are cut at the corners of the box to conduct the sap at the extremities into the box. They are then "cleaned out." This is done with a steel dipper, about four inches wide, six inches long and one inch thick, going off nearly to a point at the lower end—convex on each side. To this is fastened a wooden handle, three feet long.—With this instrument the turpentine is conveyed from the boxes to wooden buckets, (with handles attached) which usually hold from 25 to 30 boxes full, and then emptied into barrels placed at convenient distances among the trees. The barrels generally hold from six to seven buckets full, and they are sold by weight—280 pounds being the weight established by law for a barrel. A good hand can dip from three to five barrels a day. After the boxes have all been "cleaned out," they are chipped regularly *once a week*, with a curved hatchet. The bark, with about three or four grains of the wood, is then cut off above the length of the box. Four chippings fill young or "virgin" boxes, and from five to eight dippings may be obtained in one season. The turpentine procured the first year is called "virgin," and formerly brought one-third more than "yellow dip," on account of its resin. One hand will tend from five to ten thousand—owing to the density of the trees. During the year, the "scrape" or "hard" turpentine adheres to the face of the box, and it is shoved down into the box and dipped out with the last running. At the commencement of the next season, the hatchet is laid aside for the "round shave." It is an instrument of steel, round and hollow, about two inches long, and nearly in the shape of a coffee-pot spout, with a stem attached to one side, which is made fast to a wooden handle, and with this cuts are made from right and left sides to the centre, coming to a point immediately above the centre of the box. About one-fourth of an inch is thus taken off at each chipping, and 6 or 7 chippings will make one dipping. Only three dippings can be obtained in one season, and this is called yellow-dip, and ranges from $2.50 to $5.00 per barrel. In the winter the "scrape" is pushed or pulled off with flat or curved instruments, caught in trays and put into barrels. This only brings one-half as much as yellow-dip. The turpentine is then sold—principally in this State, where it is distilled or shipped to the Northern States or Europe. Trees chipped carefully will last twenty years. As the face extends upwards, longer handles supply the place of shorter. Trees are *never* injured by chipping, but are often killed by cutting too many boxes in one tree, or cutting them too deep. Turpentine was extensively made in this county, (New Hanover). But the exports of Wilmington show a large falling off in turpentine since the war. Tar is made almost entirely from the long leaf pine, and forms an important export from this State.—Correspondent of *Southern Cultivator*.

AMERICAN POMOLOGICAL SOCIETY.—Information relative to new seedlings; the comparative values of different fruits; diseases of the same; soils adapted to the various kinds; also samples of new and unnamed fruits, that drawings, &c., may be made, for publication in the biennial report of this Society, should be forwarded at once to F. R. Elliott, Cleveland, Ohio.

FOREIGN DEMAND FOR BREADSTUFFS.—The price of wheat in our market yesterday ranged from $2.55 to $2.75 per bushel. This is a high figure for wheat; but as it is worth the money it is well that farmers held their crops so as to get the advantage of the advance. The grain crops, although deficient in quantity, will yield handsomely in the aggregate and give the country what is much needed—money.—*Cincinnati Gazette.*

HORTICULTURE IN AND AROUND BALTIMORE.—Mr. Edwin Kurtz, on Lexington street, in this city, has one of the choicest and best collections in the country—having cultivated them for over forty-five years. He has a greenhouse and stove for his tender plants, and when in flower they make a fine display.

Augustus A. Hack, Esq., near to Mr. Kurtz, has a good collection. He has built a greenhouse 77 feet long, 20 feet wide, very lofty, with double glass, wire all over it, and heated with hot water—a very fine house, He attends to his plants himself and keeps them in good order.

Mr. Pepan, living on W. Baltimore street, has a small house for plants. He is quite an enthusiast in novelties, such as variegated leaf plants, which he displays when in bloom. His collection is small, but in it may be found some rare plants; and he is constantly adding to his stock. Mr. Zebulon Waters, living on York-avenue, near Greenmount Cemetery, an old but well.known cultivator of plants around Baltimore, has a fine general collection thereof, and devotes much attention to hybridizing. His stock is under the charge of Mr. Weber. Cut flowers are produced in quantities in winter.

Hamilton Easter. Esq, living on the Liberty road, near the city limits, has a snug little place, with a greenhouse and vinery in the care of Mr. Geo. Lazenby, who keeps them in good order, and which, having a fine display of flowers through the Summer, show to good advantage.

Mr. Obediah Kemp, an experienced florist, whose place is about four miles on the Harford road, has a nice collection of plants for the time since the erection of his houses. He cultivates mostly for market, at which he gets a fair share of patronage.—*Rural Gentleman.*

GOOD APPLES FOR SOUTHERN ILLINOIS.—From a meeting reported in the *Prairie Farmer* the Jeneting is reported keeping till August at Dangola. The early Harvest, Keswick Codlin, Maiden's Blush, Carolina Red June, and Jonathan were generally satisfactory. Red Astrachan, Williams' Favorite, Talman's Sweet, Benoni, and Ben Davis had much said for and against them. The latter were considered "good to sell but not to buy."

PLANTS FROM CHINA.—The *Utica Herald* notices a fine collection of dried plants introduced by R. S Williams, Esq., from China. Amongst them are rare ferns, *Asplenium Pekinense*, Lygodium japonicum, Adiantum Capillus Junonis, Cheilanthus Argentea, etc.

STRAWBERRIES AT BOSTON.—Some of the finest crops of strawberries in the United States are raised in Belmont, near Boston, Mass.—4,000 quarts per acre not being unusual. This result is obtained by taking new land, that is, land which has not recently grown a strawberry

crop; plowing it deeply, and giving plenty of manure; setting out plants in the Spring; keeping the ground perfectly clean the first season, and the next year gathering the fruit. Then plowing under the strawberry beds, and beginning again on new land. In the Boston market the Wilson will not bring more than two-thirds as much as some other kinds. Hovey's Seedling bears the highest price, and is the most popular among growers. Brighton Pine and Boston Pine are used for fertilizing the Hovey. Triomphe de Gand succeeds best in hills, and is an excellent fruit for amateur culturists.

THE FAMEUSE, WILLOW TWIG AND WAGENER APPLES.—Fameuse has but five equals in hardiness, and is an early and annual bearer; our trees bore a good crop last year, and are overloaded this. Willow, while young, rather tender; when large, second class as to hardiness; sufficiently hardy for favorable locations; a good bearer, long keeper. Wagener, second as to hardiness; the deficiency being in the trunk should be worked in the top of some variety whose trunk never fails; an early, annual, and one of our best bearers of good fruit that is in use a long season.—E. R. HEIZE, *in Iowa Homestead.*

FOREIGN INTELLIGENCE.

THE ISLAND OF CEYLON is, indeed, a spicy land. I have heard it said that you may sometimes smell the "cinnamon gardens" a hundred miles off. How true it is I cannot say. A short sketch of the isle may not be out of place here. It was known to the Greeks and Romans; and the native records date back twenty-four centuries. It is at the foot of Hindoostan, is 270 miles long, north and south, and averages 100 miles in width. The southern cape is in 5 deg. 54 min. North latitude. Area, nearly 25,000 square miles; population, about 1,700,000. It has a mountain range and some high peaks, one of them (Adam's Peak) over 8000 feet in height, and so named because, in the Brahminical legends, father Adam is said to have made it a *point d'appui*, in his giant-strides from Paradise to the continent of India, leaving behind him a foot-track 5½ feet long by 2½ feet wide, which has been religiously kept from the elements by a suitable covering. Artificial lakes are found in some places, relics of native work of former days, necessitating vast embankments—one of them 12 miles long and 160 feet wide—all for the purpose of irrigation.

The vegetable products are, of course, tropical. It is a singular fact, that the sugar-cane does not thrive there. But the Cinnamon Tree appears to be its boast. It deserves, I think, particular notice. Although found elsewhere, no variety equals this. In its wild state, it grows from 20 to 30 feet high. Perhaps the Arabian merchants were the first to deal in this article, then the Portuguese; but it took the sturdy Dutchmen to bring it to perfection by cultivation. Hence the so-called "cinnamon gardens" of later days, a tract of 12,000 acres, whose soil is pure quartz, perfectly white, and yields from 50 to 500 pounds of the aromatic bark per acre. Amsterdam sold of this article, exclusively, to the amount of 320,000 pounds yearly, for a century. Then John Bull came in for a share (A. D. 1795) and has held it ever since. Who will have it next? Coffee does well, also, and now the Agricultural Society is introducing European Fruits, &c.

Its mineral wealth is noteworthy. The plumbago is of excellent quality; the iron of the very best; its pearl fisheries are well known, and gems are abundant. The climate is healthy, and in some parts very agreeable. Ice may be seen in January and February, even at the moderate elevation of 6000 feet.

What kinds of animals are there? you will say. Well, elephants for one, and plenty of them. They have fine forests to roam in, comprising 416 varieties of valuable wood, including satin-wood and ebony.—*Circular.*

W. H. HARVEY, M. D., F. R. S., DIED May 15, 1866.—Of botanists, for the most part, the world knows but little, till a dry name is all that is left.

For once then let us anticipate these slow decisions of posterity, and while there are yet living hearts to be stirred and eyes to overflow with pleasure at his fame, let us do homage to one whose name is certain, in the generation to come to be quoted and referred to, not only with respect as a general naturalist, but as the highest authority in that lovely branch of botanical study to which he for a long period of his life more particularly devoted himself—Seaweeds.

Dr. Harvey's native place was Summerville, near Limerick, in Ireland. His parents were Quakers, and of eleven children he was the youngest-born by five years.

At thirteen he was sent to the school at Ballitore, where Burke had begun his scholarly career, and here, then, and over the downs and cliffs of the wild county of Clare, on the coast of which the Harvey family spent a portion of most summers, roamed the blue-eyed, fair-haired schoolboy, who was to ramble half-round the world before he left it. And like other children he collected shells, and caught insects, and picked up Seaweed, and gathered flowers and loved them; but, unlike most, when others forget them or threw them away, or only half observed them, he bore them in his thoughts, compared one with another, kept them and reconsidered them, asked questions and looked at books, and so by insensible degrees acquired both information and a habit of observation which few suspected. He did nothing probably, at that time, which hundreds of others could not have done with equal ease had they cared. But the feeling which made him wish to do it and crave for further light was, like all other special tendencies of the mind, a special gift. "Wert thou to examine a single Moss—the most common—thou wouldst be in raptures—at least I was," he writes to a friend when only sixteen, "the exquisite beauty and regularity of the fringe which surrounds the mouth of the capsule, &c., &c." At last, during one of the wanderings over hill and dale, he spied a tiny plant in the grass, which he did not remember to have seen before. If my memory of the anecdote be correct, there was some accidental peculiarity about the specimen which misled him, and, after the manner of young naturalists, he hoped he had found something new, and ventured the daring measure of sending it to a well known botanists, Dr. Wilson, who seemed to have recognized in his correspondent, even through a mistake, an amount of accuracy of eyesight which augured great things to come. This was no new species, he wrote, but he hoped the young sender would find many a new one before he died! The plant was the Little Field Madder (Sherardia arvensis), and young Harvey had taken it for a new species of Bedstraw (Galium).

First came the discovery of a new fresh-water shell (Limnæa involuta), in a mountain lake (Cromaglaun),near Killarney; and then another "find," which determined the whole course of his life—that of the rare Moss Hookeria lætevirens in two quite new habitats. The discovery of a new habitat or place of growth is always a delight and triumph to a collector, and on this occasion young Harvey once more ventured to address a stranger. But the Moss he had found was Sir William Hooker's. Its generic name was given in his honor, and to him accordingly the letter was sent. And from this small occurrence grew not only a correspondence, but an affectionate friendship which continued unbroken in its intimacy till the death of Sir William Hooker in 1865, less than a year before that of his much younger friend.

Enough of this, however. The flora of the Cape and all other land floras had, even at that time, a formidable rival in the young naturalist's heart—the flora of the sea. He himself describes the west coast of Ireland—Milton, Malbay, &c. —"the shore where, as a boy, I made acquaintances with the sea and its treasures, and became enamoured of them." And accordingly, though his first published volume was on the "Genera of South African Plants,"* his second was a "Manual of British Algæ," which (re-edited in 1849), remains one of his most charming and useful books. When he wrote this he was settled in his own county, having been appointed first Keeper of the Herbarium at Trinity College, Dublin, and afterwards Professor of Botany—which offices he held for the rest of his life.

We must never think of him, however, as a stationary closet naturalist. The flora of the sea was not to be understood without constant excursions to the coast in different directions; but such necessities were a pleasure; and in January, 1846, he brought out the first part of one of his larger works—the "Phycologia Britannica, or History of British Seaweeds;" all the species of which, to the number of 360, he figured and drew on stone himself. Next year came out the "Neries Australis, or Algæ of the Southern Ocean," with fifty plates only, but showing that even while at the Cape, his mind had not been diverted altogether from this most favorite subject.

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* Singularly enough to return to this subject in the last years of his life. He worked at the elaborate "Cape Flora," which he was bringing out in conjunction with Dr. Sonder, of Hamburg, as long as work was possible.

[To be Continued.]

The Gardener's Monthly.

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HINTS FOR MARCH.

FLOWER GARDEN AND PLEASURE GROUND.

Ladies have a passion for flower seeds. In this they have our sympathy. There is nothing more interesting than seed raising. Many fail through lack of knowledge,—a few *first principles.* Now let our fair friends come with us to the seed beds and we will give them a practical lesson in the art.

The day is warm, and the surface soil just dry enough to powder when struck with the back of the trowel. We should not ask their company otherwise, for when the soil is sticky it wont do to sow seed. The ground has been dry several days before. The surface is now powdered and about the thickness of the trowel blade scraped off. The seed is then sown, the soil drawn back and beat firmly down on the seed. You see how near the top we sowed the seed,and how firmly we beat the soil over it, and we spoke about a "first principle." This principle is this.—Seeds want moisture to make them grow, but they must also have air, one is an evil without the other. If deep they get only water, in which case they rot. If entirely on the surface they get only air, and then they dry up. "But, Mr. Hintsman, why beat the soil so firm?" Another principle, dear lady, lies there. Large spaces in soil enable the earth to dry out rapidly; small spaces, on the other hand, hold water. Crushing earth, *when dry*, gives it these small spaces, or as gardeners call it, makes it *porous*, and thus you see we have set our seeds where they will be near the air, and fixed them so that they shall be regularly moist. Thanking the ladies for their delightful company, we will now go back to the library and arrange with them lists of seeds to sow. Some are very hardy, natives mostly of Texas, New Mexico, Rocky Mountains, California, China, Japan, Northern Asia, or Central Europe. There are many beautiful things which will do well in most places, which can be selected from the Seedsman's Catalogue. We shall only give those which are very nearly sure to do well anywhere—plants of sweet tempers, good dispositions, accomodating, lovely, blooming on industriously till the sere leafing time—just the characters any young man matrimonially disposed may find amongst the young ladies who love the flowers we are selecting for them.

Of this class are Sweet Alyssum, white—Asters of many various colors,—Browallia, blue and white — Cacalia, orange — Calceolaria pinnata, yellow—Coreopsis, yellow and brown—Callirrhœ pedata and involucrata, mauve and solferino shade—Candytuft, white and purple—Collinsia bicolor, white and purple—Cosmos bipinnata, rosy purple—Larkspurs, various colors—Erysimum Peroffskianum, rosy—Gaillardia picta, yellow and orange—Gilia tricolor, white and purple—Godetia, any of the varieties, purple shades—Linum grandiflorum, scarlet—Lobelia erinus, blue—Tagetes signata patula, orange—Mignonette, greenish brown — Nasturtiums of various varieties—Palefolia texana, lilac — Perilla Nankinensis for those who like purplish foliage — Petunias in sorts — Portulacca, several colors—Viola cornuta, blue—Whitlavia grandiflora, blue and white—Drummond Phlox.

The more tender things need not be sown in the Middle states before a month later, say middle of April. The best characters among these we should award to Amaranthus sanguineus for its leaves—Balsams of many colors—Cockscombs —Morning glories—Double Zinnias—Cypress Vine — Acroclinium, rose and white — Indian Shot for their tropical foliage—Datura Wrightii, white and lilac—Globe Amaranthus—gourds—Sensitive plant—Thunbergias—Variegated Corn for its striped foliage.

Many are fond of ornamental grasses. The following half-a-dozen are distinct in appearance and easy to raise:

Hordeum jubatum — Lagurus ovatus — Coix lachryma—Briza maxima—Brizopyrum siculum —Agrostis nebulosa.

Walks should now have their spring dressing—the verges cut, and a thin coating of new gravel laid on. Before putting on the new, harrow up the face of the old gravel with a strong iron-toothed rake. Roll well after the new is laid on.

Planting trees will require particular attention now; but do not be in a hurry the moment the frost is out of the ground. Cold winds are very hard on newly set out trees. Wait till they are gone. Always shorten in a little the shoots of all trees planted. They will grow the faster for it, and are more certain to live. Evergreens should be left to the last.

Shrubs are not near enough employed in planting small places. By a judicious selection, a place may be had in blooming state all the year; and they, besides, give it a greater interest by their variety, than is obtained by the too frequent error of filling it up with but two or three forest trees of gigantic growth. Plant thickly at first, to give the place a finished appearance, and thin out as they grow older. Masses of shrubs have a fine effect on a small place. The centre of such masses should be filled with evergreen shrubs, to prevent a too naked appearance in the winter season.

Ornamental hedges, judiciously introduced into a small place, add greatly to its interest. No easier method offers whereby to make two acres of garden out of one in the surveyor's draught. The Arborvitæ, Chinese and American; Hemlock; Holly, Beech, Hornbeam, Pyrus japonica, Privet, and Buckthorn may be applied to this purpose.

Herbaceous plants do badly if several years in one place. Every second year, at this season, take up and divide them. Sow as soon as possible some hardy annuals. The earlier they are in the ground after the frost leaves it, the finer they bloom.

FRUIT GARDEN.

Where there is danger of choice fruit suffering injury from late frosts, protect by a few evergreen branches, or muslin. Some trees can be trained so as to be suited easily to different modes of protection.

Take borers out of fruit trees, and wrap tarred paper round the stem at the collar, to keep them out for the rest of the season.

Wash the bark of trees, where not done, to kill the eggs of insects, and soften the old skin so as to permit it to swell freely.

For small places, a plentiful supply of Strawberries, Raspberries, Blackberries, Gooseberries, and Currants should be provided, and the Grapevine by no means forgotten. These seldom fail to do well. Strawberries do well on a rich, dry, but deep soil. On banks that are not too poor or dry, they seldom fail to do well, and are often three weeks earlier than when on level soil. The Blackberry also will do on dry, rich bank. We mention this as there are often such spots in small gardens which it is desirable to render useful. *Strawberries seldom do well in low, wet ground.* Raspberries and Gooseberries do better there.

In planting Raspberries, they should be cut down nearly to the ground when planted. You lose the crop, of course, but you get good strong canes for next year. If you leave the canes long enough to bear, it will probably be the only crop you will ever get from them. *Never expect anything to bear the year after transplanting.* It is generally at the expense of the future health of the tree.

Grapes that have become weak from age may be renewed by layering down a branch some feet just under the surface, and then cut back, so that one good eye only be left at the surface of the soil.

Any choice fruit may be grafted, at this season, on others less desirable. The scions should be cut before the buds begin to swell, and set in the ground as cuttings. But they should not be grafted till the stock is just about bursting into leaf. Those who have much of this work to do begin earlier—we speak principally to amateurs with but a few things to graft.

Pruning of most kinds of fruits has been accomplished through the winter. It is customary, however, to leave the peach till towards spring, in order to cut out any wood that may be injured through the winter. In other respects the peach should have little pruning at this season, as it tends only to make it grow more luxuriously; and a too free vigor of growth is a fault of the peach in this climate. The only pruning admissible is that which has for its object the production of shoots in naked or desirable places.

The Strawberry, where it has been covered during the winter, should be uncovered as early as possible in spring, that the warm spring suns may exert all their influence on producing an early crop. As soon as growth commences, a sowing of guano has been found to be of great benefit to the crop of fruit.

In vineries where they have been forced early

the fruit will be setting, when it is usual not to syringe so freely about the flowers as before. Cold vineries will be about bursting their buds, and should have every encouragement to break regularly, which is most usually accomplished by bending the canes down as horizontally as possible. Most vineries are now built much flatter than formerly, and less anxiety is therefore felt in regard to this bursting trouble. Where vines are grown inside altogether, care must be used to guard against the soil becoming too dry. Usually about the time of stoning, a thorough soaking is given to the soil about them. Where vines grow in outside borders, the objection is that melting snows cool the roots too much, and make too great an extreme between the temperature of root and branch. The best English gardeners now place hot stable manure on their borders, and cover these with boards, so as to throw off the rain.

VEGETABLE GARDEN.

The preparation of hotbeds for getting vegetable seeds forward, is one of the most important of March matters. Those who have regular stone permanent pits are well off. Most have to extemporize a hotbed frame. Some sink a pit in the earth and fill in the manure; but heavy rains are apt to cool off the heat too suddenly. They are best made above ground, and a course of corn-stalks, brush-wood, or some other matters put around to keep the bed from losing heat by winds too rapidly.

Much interest will be felt this year in the Tomato question. A good early is of vast importance. The common large Early Red has not been much excelled. Keyes' Early, though it was a mistake to introduce it as 30 days earlier than any other, is yet a good early kind. Tilden has also given excellent satisfaction for quality, and the Cook's Favorite is yet a favorite with many growers. These four kinds seem to have the field of combat chiefly to themselves. The Eureka is spoken well of in the West, but we have not seen it growing. Of the other hotbed vegetables, Pepper, Egg-plant, &c., we believe there has been nothing particularly new of special value.

Of early out-door vegetables, the race between Potatoes is with Early Goodrich and Early Sebec, each having their favorites. They are both good kinds.

In Celery, the Boston Market, a thick dwarf kind is of excellent quality. Dwarf kinds are much sought after, as not requiring earthing so high as others. Turner's White is said to be a good dwarf. Of Peas, though dwarfs save sticks, they do not bear much. Of the taller ones we have not yet seen anything earlier than Dan O'Rourke, although a new English one called Advancer is *claimed* to be two weeks eariler. Amongst Beets the Early Six Week Turnip rooted, is perhaps the earliest. Carrot, the Early Horn; Cucumber, the Early White Spine, or Early Cluster; Lettuce, the Silesian, or Early Curled—to cut before heading; and the Early Butter left to head, are the first in season. Amongst the Radishes, the old Short Top, and Red and White Turnip are still ahead; and in Spinach, the Old Round-leaved. So that on the whole there has been but little advance made on early kinds of vegetables.

Asparagus roots are generally planted too thickly to produce fine shoots; they starve one another. A bed five feet wide should have three rows, and the plants set about eighteen inches apart. A deep soil is very important, as the succulent stems require every chance they can get for obtaining moisture. About four inches beneath the soil is sufficient to plant them. Rhubarb also requires a deep, rich, and moist soil. The Linnæus and Victoria, of old and well tried kinds, are considered very good for size and quality; the Prince Albert and Tobolsk for earliness; and the Prince of Wales and Blood Royal for color and flavor. Horseradish beds are best made by taking pieces of strong roots, about one inch long, and making a hole about a foot or fifteen inches deep, with a dibble, and dropping the piece to the bottom of the hole. A clean, straight root will then rise up through the soil. Crowns or eyes are better than pieces of roots, where they can be had, and a rich clayey soil better than a light sandy one.

About the middle of the month, Celery, late Cabbage, Brocoli, &c., is usually sown in this latitude.

All gardens should have beds of herbs. They are always looked for in the fall, and nearly always forgotten in spring. Now is the time to plant Thyme, Sage, Mint, Balm, and other perennial herbs; and Parsley and other seeds of hardy kinds may be sown. When we say *now*, it is, of course, understood to mean where the frost has evidently broken up for the season. Our readers in less-favored climes will not forget it when it does.

COMMUNICATIONS.

FOREIGN REMINISCENCES. No. 2.

BY H. W. SARGENT, WODENETHE, N. Y.

Near Dublin are many fine residences, Lord Powerscourt's, Lord Monk's, etc.; the finest by far being "Carton," the estate of the Duke of Leinster, with most beautiful grounds and superb trees, especially Cedars of Lebanon; the house charmingly situated over an Italian garden, and in view of a splendid Park. A novel effect was produced on the Italian garden by the vases being enclosed in wicker work.

Near Bangor is the famous Slate quarry of Col. Pennant, with his superb residence, Penryn Castle and its model cottages, and fine old Yew avenue to the church, planted 150 years ago. Near Chester, is Eaton Hall, the celebrated residence of the Marquis of Westminster, so wealthy twenty years ago even, that our postillion told us his income was £1,000 a day, and £2,000 of a Sunday.

This place being so accessible from Liverpool is generally the first place visited by Americans, and therefore well known.

The effect of the gardens is very grand and stately, but very monotonous and flat, the grass being full of weeds—especially daisy.

There is a very fine Araucaria here, 40 feet high, but the variety of trees in the ornamental grounds is very small, Irish Yews and Arborvitæ being represented everywhere. Only one Golden Yew, which, like the Cryptomeria and Douglas Fir, does not flourish well here. Neither does the Pinus excelsa.

Another most interesting place near Chester is Hoole House, Mrs. Hamilton's, formerly Lady Boughton, famous for its rock work for the past 30 years, and admirably described some 25 years since in Loudon's *Gardeners' Magazine.*

A little Lawn, of less than 3 acres, surrounded by a rockery over 40 feet high, planted in clipped Yews, Araucarias, and most of the new Evergreens, especially the more rigid growing ones, like Picea, Pinsapo, Cephalonica, pichta, etc.

A weird-looking Cedar of Lebanon, only 8 feet high, hanging over a chasm or fissure in this artistically arranged rockery, mossy and twisted, has so much the appearance, among the sharp grey points, of age, that you almost believe you are looking through an inverted opera-glass at a stupendous range of savage *snow-clad* mountains, the snow effect being produced by white Derbyshire Spa.

Near Liverpool (8 miles) is Knowlesley Hall, Lord Derby's, more celebrated for its stables than its gardens. The stables were superb, being a quadrangle 200 feet square, enclosing a paved yard. In the centre, a place under cover for washing carriages; beyond, a circle in straw for exercising horses. Each pair of horses is kept in boxes in separate stables, 30 pair in all, besides the single horses, the best costing 800 guineas, $4,000; 35 grooms, one groom to two horses, 6 coachmen, etc. The Gardens contain 9 acres, and require, with the ornamental grounds, 35 men and 5 women.

The Park is 12 miles in circumference, and the Deer Park 14 miles round, making 26 miles of wall. There are 3,000 deer, 25 Lodges and gates, and 50 other gardeners' and game-keepers' cottages.

Knowlesley, or the largest part of it, was built by the 18th Earl of Derby, in order to receive his son-in-law, Henry VII, after placing the crown of England upon his head at the battle of Bosworth field, where he slew Richard III.

Of all the places in this part of England, I know none, to Americans at least, as interesting as Levens Hall, belonging to the Hon. Mr. Howard, near Milnthrop, in Cumberland, about 12 miles from Boness, a fine old Elizabethan mansion, a portion built in the 11th century, and the furniture, hangings, etc., belonging to this period; a grand old servants' hall, in oak, with an immense fire-place, 6 to 8 feet wide, and 1582 over it. At the upper end of the Hall, on a raised dais or platform are the long oak tables, for the servants' meals, battered and hacked, and benches for them to sit upon.

Above in the next story a superb Baronial Hall, paneled in oak, heavily carved, and hung in embossed and gilded leather, with exquisitely emblazoned windows, square bays, in small diamond, and hexagon patterns, set in lead. With a square of Turkey carpet on the centre of the well-polished oak floor, and armor, boar spears, saddles, etc. about the room. This Hall opened by three ascending steps (one corner being arranged for a chapel) into the state drawing-room, so beautifully carved in wood, that at present prices, low even as these are in England, it is estimated the same work would cost £3,000.

In this apartment also are the same exquisite square bay windows, and stained glass, set in

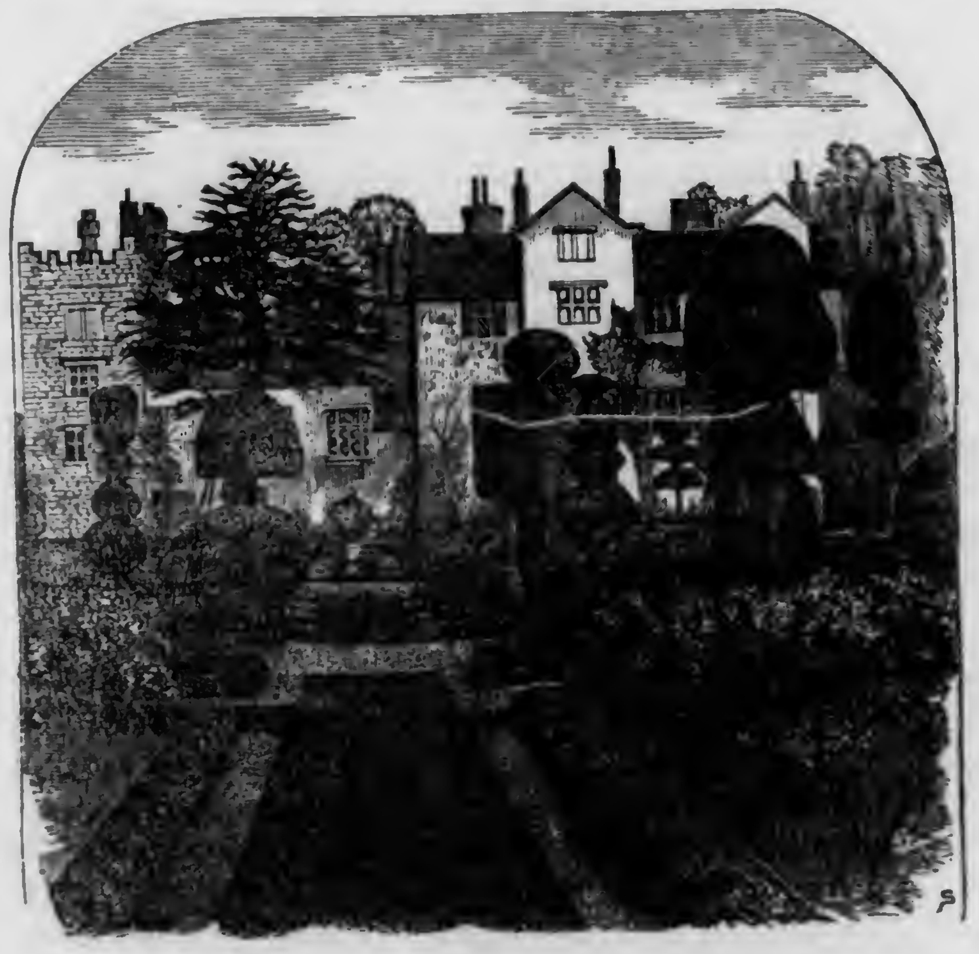
delicate lead frames, and beautifully tapestried chairs. This room is also hung in embossed and gilded leather. From this again, by three steps, you descend into a Library, equally wonderful in its carvings of oak, with stained glass windows and hangings of leather.

One of the upper halls is hung entirely in arras, a sort of tapestry resembling Gobelin. From this several concealed doors lead to various quaint chambers by the most mysterious passages. The leather hangings of the state chamber were most gorgeous, being stamped in crimson and gold, and the curtains to the bed and windows being patch work, quilted. The small library, morning room, dining room, etc., were in the same style of carved oak and leather A beautiful Gobelin curtain was suspended over the grand stair-case, to close, if necessary, in order to convert the Grand Hall into a State dining room.

The gardens were equally wonderful. Seven acres being devoted to Topiary work, most of it planted and first clipped, by Beaumont, Gardener to James II.; the clipped trees, mostly Yew, Holly and Box, being from 12 to 30 feet high, (as seen by enclosed sketch.) Figures of Queen Elizabeth and her Ladies being cut in Box. There were also the celebrated pleached alleys of Shakspeare's time, and a Bowling green divided by Beech Hedges 12 feet high, and the arches 20. The sod (turf as it is called in England), being laid on *slate slabs* 250 years ago, and as level and as smooth as a billiard table. Most of the trees had been annually clipped for this number of years (250).

One of the old gardeners had been here 70 and two over 50 years, and looked coeval with the place.

On the 1st of May they have a peculiar custom at Levens Hall, to wit: "The Feast of the Radishes." Radishes, bread and butter and ale, called "Morocco," 20 years old, are served to the Mayor and Corporation of the town of Kendal, and in fact to the entire Parish and all strangers. The person who drinks "Morocco" for the first time is obliged to drink "prosperity to Levens Hall as long as the river Kent runs." The Park is fine, filled with deer, and having a grand old Beech avenue.



HOUSE AND HEDGE SPARROWS.

BY OHIO

Farmers and fruit-growers should without delay engage, either individually or in clubs, in importing and diffusing throughout our Country these two species of Exotic Sparrows.

It is demonstrated beyond contradiction,

1st. That they will effectually keep in check many species of depredating insects

2d. That the habits of these birds are in no instance seriously injurious to farmer's crops, and that imputations of that kind are founded in error.

3d. That these birds will increase and thrive when set at liberty in the vicinity of New York City. Both they and the European Sky Lark are rapidly increasing on Staten Island and at Hoboken, where the *Sparrows* have already exterminated the *Canker Worm*.

FRUIT AT HARRISBURG, OHIO.

BY E. MANNING.

In looking over the December number of the *Monthly* I see your notice of the Clapp's Favorite Pear as grown on my grounds during your September call at my place. I agree with you that the Clapp's Favorite Pear was not of first quality; it was the first time it fruited at my place, and it may yet improve as the trees get older. Should it never improve, it would still be a valuable variety for market; it ripens here ten days earlier than the Bartlett, and ripens its fruit more regularly, not requiring to be picked over so often as Bartlett; add to this its greater thriftiness, having every appearance of a strong constitution resembling the *Flemish Beauty*, in its deep luxuriant green leaf, only more so. Among some thirty trees of this variety, only one tree was the least affected with leaf-scab, and that very slightly, and the fruit was larger than Bartlett grown side by side; and far more free from knots and imperfections, and nearer of one size, and bears as early as any other variety I know of. I predict for it great popularity, as it was less affected with leaf disease than any other variety grown on my grounds.

Edmonds fruited here this season for the first time. It was nearly first quality; the tree is thrifty and appears to be an early bearer, but the fruit is only medium size, or hardly that, of a pale dull russet color, not very attractive. The leaves appear to be very sensitive of atmospheric changes, were badly affected by leaf-scab. I do not think it will ever be a valuable variety for market here.

Hovey's Dana, was in fruit here this season for the first time. The trees are thrifty upright growers, and appear healthy, but the fruit is not any larger than Seckel, of much the same flavor, only a little more buttery. A good amateur fruit. If it were four times as large it would be valuable for market; but like the Seckel, would hardly sell in market, when others four times as large, not half so good, would sell readily at a good price.

Admirable, Dana, fruited here the present season. Tree very thrifty, fruit less than Madeleine; of no value.

Supreme d'Juniper, a fine, small early Pear, very sweet, productive, bears early, good as an amateur fruit.

Beurre Bosc, is certainly here the very finest Pear on my grounds. Of the very largest size, tree thrifty, fruit always fair, a regular bearer, and will sell for a higher price in market than any other pear of its season. Its very large size, peculiar shape, its rich bronze gold color, and great excellence is all that could be desired—the Ne plus ultra.

Bartlett well know of best quality, profitable market pear.

Urbaniste, second quality, good bearer, size 1 to 2, and a good market variety, very productive.

Beurre Clairgeau, large and fine here on thin soil, worthless on strong soil; trees good bearers and profitable.

Onondaga, one of the most valuable for market, very vigorous; trees here the present season all bore well, some not much larger than a walking cane bore six or eight good specimens; very profitable market variety, second quality.

Duchesse d'Angouleme, good second quality.

Flemish Beauty, large, fine, nearly first rate, profitable.

Pius IX, large, good second quality, tree thrifty.

Howell, large, fine, very handsome, bears young; fruit nearly first rate, tree thrifty, very profitable.

White Doyenne, first quality when favorable; not to be depended upon.

Golden Beurre of Bilboa, very fine medium size.

Beurre d'Anjou, medium size, second quality.

Beurre Diel, poor here, not to be depended upon.

Madeleine, Bloodgood, Ananas d'Ete, Tyson, Rostiezer, Lawrence, Doyenne d'Alencon, Paradise d'Automne, Doyenne Boussock, and several other varieties, good amateur sorts.

Doyenne du Comice, large and very fine.

On the rejected list I would place Stevens' Genesee, Vicar of Winkfield, Glout Morceau, Belle Lucrative, Beurre d'Amanlis, besides many others. The two last are not fit to eat when grown here.

Among the early varieties of Apples that does

well here are Early Harvest, Primate, Lymans, Large Summer, Tetopsky or 4th of July, Garretsons Early, Summer Rose, High Top Sweet, Genesee Chief, Carolina June, Sweet Bough, Blinkbonny, Benoni; Chenango Strawberry, the very best of its season, large, very productive and of excellent quality—the handsomest of all apples, and will sell higher to dealers or in market than any other variety of its time of ripening.

Homany new large and promising large red, of good quality. In late summer and early fall American Summer Pearmain, Pomme Royal, Partes, St. Lawrence, Jefferis and Alexander are all good.

Fall Gravenstein, Fall Pippin, Hawley, Fall Wine, Mt. Pleasant Sweet, are best; Maiden's Blush. In the rejected list, I would place Early George, Summer Superior, Summer Julian. Ben Davis I regard as an apple of great promise not yet sufficiently tested, the trees are very vigorous, and appear healthy; fruit very handsome and good, large size.

Jonathan, also of great promise, fruit of medium size, very beautiful and excellent.

Northern Spy has begun to bear here, and promises very well; fruit large and very showy, handsome and good, has borne more here than Belmont, both planted at the same time.

Rome Beauty is certainly valuable here, a great and sure bearer, very handsome, of good quality and profitable.

Hubbardson's Nonsuch, of excellent quality, and promises well, large and fine.

Swaar promises well, trees thrifty, spreading, fruit large and of excellent quality.

Newtown Pippin promises well here on thin soil, trees of moderate vigor, on strong upland soil very vigorous, have raised last season a specimen weighing 15 ounces, of the very best quality.

White Pippin, Baldwin, Rambo, Norton's Melon, Esopus Spitzenburg, Fallowater, Wine Sap, Bellflower, Seek-no-further, King of Tompkins County, all promise well so far. On the rejected list I would place Canada Reinette, Putman Russet, and many other varieties less common.

Cherries here matured before the drought set in, so as to stunt their growth.

Among the varieties less known of great excellence, were the Great Bigarreau of Downing. It never showed its true character till this season. I see the trees only want age to develope their true character. My trees had borne a few for several years before; but this season they were laden richly with very beautiful fruit of the very choicest kind and largest size, that the beholder was struck with amazement, and all that ate of them were surprised at their excellence.

Black Hawk, another variety like the preceding, takes time to develope its true character. It was certainly very superior, and I have no doubt that both these varieties will yet attain greater excellence. They did the present season eclipse the far-famed Black Tartarian.

Pantrick, another variety less known than others, has steadily increased in productiveness and excellence. These three varieties were the very best that bore here this season. I had several other varieties of the black cherry on lower ground that got killed by spring frost.

Among the better known varieties here, Rockport Bigarreau bore very heavily as it always does; if any cherry does bear, it will. It is always fine and of the most productive variety.

Governor Wood is a fine cherry, very good and handsome, not as hardy as Rockport Bigarreau, but very fine.

Kirtland's Mary is also very fine, and a good bearer, large and fine.

Red Jacket is a very vigorous tree, and a great bearer, not quite as large as some others, but wonderfully productive and healthy.

Jaconet is also a very fine cherry; but not quite equal to some others.

Monstreuse de Mezel is a good cherry, and still appears to increase in size and productiveness.

Napoleon Bigarreau was of truly monstrous size, very productive, second quality.

Elkhorn is only second rate, but productive.

Elton, very productive, large and good.

E. P, Guigne, the earliest and best early.

Cleveland Bigarreau is also large and fine.

Ohio Beauty, very fine, productive and good.

Graffion promises well, not sufficiently tested.

American Heart, very productive, rots badly.

Downton, third rate only.

Hortense, very productive, large third rate.

Burr and *Seedling Late Bigarreau*, tender, lost by bark bursting, strong bearer.

May Duke, Late Duke, Royal Duke, Arch Duke, Belle Magnifique, Earl Richmond, Vails' August Duke, Knight's E. Black, Empress Eugenie, are all pretty good. Kirtland's Mammoth and Black Eagle always blossom never bear.

We have no later sort, or late as good, nor as large as a variety which I have seen only in this settlement. I suppose a natural seedling of the Morella class. When ripe almost black, larger than the May Duke here, and two weeks later than any other variety.

THEORY AND FACT.

BY W. H. W.

Theory.—The *Horticulturist* for January, p. 24, copies from the London *Journal of Horticulture*, a brief article ascribing the cracking of pears to want of moisture.

Fact.—The last summer was the most rainy that has been experienced in New England for many years, and pears have never before cracked so generally and so badly.

[This was received before our last number went to press. In it we had some remarks on the same subject. It is clear that the nature of this fungoid disease is not as well understood in Europe as it is by our readers. Fungi that germinate in the atmosphere, as so many kinds do, may be helped by dampness ; but such as breed in the sap, as this one does, can care but little for atmospheric moisture.—Ed.]

RAWLE'S JANET APPLE.

BY J. H. CREIGHTON, IRONTON, O.

This old apple is still plenty in market in southern Ohio ; but like certain men, needs to be understood to be appreciated. The tree is a slow or medium grower, but healthy and strong, and bears young—but over-bears. It must have good soil, and such is the slow and elaborate process by which it ripens its exquisite fruit that it must positively be left on the tree till winter. It will improve till freezing weather. It is injured less by freezing than any other apple. When pulled too soon they have a woody taste, and many barrels are taken to market in this state. They will keep till June and lose no flavor ; perhaps not one-fourth of those sold in market have been fairly treated. When this apple is in its perfection—having good soil, and allowed to hang long on the tree—we pronounce it the most delicious apple we ever knew. It has a breaking, snapping, cracking texture, and when it splashes and scatters its sparkling delicate juice round over the organs of taste, it seems in an instant to fill every part of the mouth with its high wine-like flavor.

MY GRAPES, DURING THE PAST SUMMER AND FALL.

BY HORTICOLA, NORTH HOBOKEN, N. J.

(*Continued from page* 46.)

What is the cause of all this? Is it the weather?

The summer of 1866 was excessively hot and dry ; so much so that hardly another one like it is on record. Mildew was prevalent everywhere, and consequently it was inferred that the heat and drought had caused it. In my grounds however, there was very little of it ; it was easily subdued by sulphuration. Yet the Concord and Israella did not grow at all, nor did the Delaware ripen. In the summer of 1867 it was excessively wet and comparatively cool, though sultry. Mildew was again prevalent, and it was inferred that it was caused by the incessant rains. (On the last of July we had received here already 34.50 inches of rain since the 1st of January ; how many inches may have fallen in August I do not know, as I did not measure it, but it cannot have been less than 6 or 8 inches.) It was impossible to sulphurate my vines on account of the rains ; a single vine only was dusted, but to no purpose.

Is it stagnant water in the ground?

My little garden is situated on a declivity, with a fall of 7 feet 11 inches in a hundred, from north north-east, to south south-west. It is carefully under-drained ; a deep well which I had dug just at the lowest point receives all the drains. The water in it never rises higher than to within 6 feet from the surface. Aside from this, *my soil, which is four feet deep, is raised two feet above the surface of the adjacent street.* It was an expensive operation, but I did not hesitate to undertake it.

Is it want of shelter?

The summit of the ridge, on which my garden lies, is only a few rods distant from it, and about *ten* feet higher. This summit is, besides, covered with houses and trees, so that my garden is effectually protected from northwest, north, and northeast winds. About 500 paces to the east of it, the ground rises almost abruptly to the height of thirty feet, crowned with a belt of large forest trees. The garden is only *open towards the southwest and east* ; towards the west it is encircled by rising ground covered with houses and other buildings on the summit. A board fence, 9 feet high, would alone be sufficient ; I had it built by the advice of *Dr. Grant*, who saw the place when I had purchased it.

Is it the soil?

The natural soil here is stiff clay ; in my garden the subsoil is gravel and fine sand. Before I commenced planting I had two feet of the surface soil removed, which was replaced *by four feet* of carefully prepared compost. I obtained permission to take the sods from an old pasture lot which never had been tilled. I added ashes, muck, lime, rubbish, bones, oyster shells, manure, etc., and did not use it before it was reduced to a perfectly homogeneous mass. Some vinegrowers think my soil is *too light* ; others that it is *too heavy*, which would seem to indicate that it is about right.

Is it close pruning and pinching?

Averse to close pruning, I have constantly to defend myself against my German friends, who insist that it is much better to prune and pinch too short than too long. In 1866 I omitted pinching altogether, also in 1867 ; only the bearing shoots of the Weehawken I pinched in. I hoped that I might, in this way, be able to grow roots ; for I knew full well that there is always something the matter with the roots when a vine begins to fail.

Too close pruning and pinching are undoubtedly injurious, but not to such a degree as is sometimes asserted. Before the Oidum Tuckeri made its appearance, it occurred to nobody, especially in some countries, that its effect was so deleterious and rapid as many now believe. I will here only adduce Hungary as an illustration : In that country with excessively hot summers, and equally as cold winters, the vines are cut down as a general rule every fall to the surface of the ground, because it is then much easier to cover them. A vineyard so treated looks in the autumn or early spring like a field planted to cabbage. Those heads, the result of pruning, assume sometimes very curious forms. At the time of the vintage some of them are not unfrequently cut off, carried home, and nailed to the walls of the houses like staghorns, so they are hollowed out, and used for pitchers or drinking vessels. And, notwithstanding this, there are vines and vineyards in Hungary, treated in this manner, one or two centuries old. When the vineyards of Europe were devastated by the oidium, *Hungary alone enjoyed a perfect immunity from the disease* for a series of years. Hungarian wines were imported into Spain, and exported again as Spanish wines. Afterwards, it is true, the oidium found its way into Hungary, but not until it had lost much of its virulence.

I know that when a large root of a tree is cut off, often a corresponding side of the tree dies. In planting a climbing rose on my house, a long and thick root of an Isabella vine was so much injured by the spade that I had to remove it. This was in the fall. In the following spring one of the two arms of the vine died. *But I do not know that a root dies, when a limb of the tree is removed.* How often are old trees regrafted ?

In Germany I saw shorn Hawthorne hedges a century old, in full vigor. I saw Yews trimmed to all manner of fanciful forms, planted in the Seventeenth century. Not a leaf was permitted to project there. In this place is a beautiful hedge of Norway Spruce, trimmed as smooth as a planed board. I have known it for twelve years ; it is as thrifty and vigorous as can be desired.

Are not young grapevines cut down every year to acquire strength for making bearing wood ? Are not young trees cut down in this country as well as in France and in Germany ? Has anybody ever observed injurious results from this practice ?

I have two hundred pear trees, trained *en cordon*, vertical, and growing on an area of exactly *two hundred square feet.* They have, of course, no branches, but only fruit spurs, except a single leader. This leader, however, grows every year amazingly ; frequently six feet high.

Five or six years ago, I had a most beautiful collection of Passion flowers, comprising 135 different kinds. *Dr. Regel*, in St. Petersburg, Russia, believed, as he said in his "Garden Flora," that it was the largest in existence. I made, then, many experiments in dwarfing them, and succeeded perfectly with P. alata, punicea, and quadrangularis. I remember especially a plant of the quadrangularis variety, Decaisneana, 17 inches high, which had 51 flowers on it. I effected this dwarfing by *very close* pinching ; still all its roots remained healthy, so that I had to root-prune the plant very frequently. I kept it for five years, and lost it by frost.

My seedling, the Weehawken, has continued improving every year. A plant of the Vitis amurensis, sent to me by the late *Dr. Von Siebold*, which is known to ripen its fruit even as far north as St. Petersburg, grew very vigorously until 1867. It bore two small clusters of very sweet but not high-flavored fruit, but made no wood ; it will die before I shall be able to get it on a stronger root. I should not wish to lose it on account of its earliness ; it ripened its clusters in the last week of July, however unfavorable the season was. A blue Malvasier, growing by the side of it, mildewed, but ripened its fruit like the *large blue* and the *Louisa* Cibebe. A *Riessling*, (the aromatic variety) grew last summer beautifully, but the peduncle of every cluster dried up, before any of them was fully ripe. The vine made a good growth.

A *Red Traminer*, seven years old, bore for the first time a full crop and ripened it. The canes it made are unusually strong. A *Lugiana nera* by the side of it, made in 1865 a cane 42 feet long and bore two large clusters. In 1866 it did not grow at all like the Concord and Israella ; last summer the longest shoot it made measured 15 inches.

I could continue in this way for a long time ; but to what purpose ? It is evident from the above observations that the roots of some varieties and species have a greater power of resistance against injurious influences than those of others ; and that even the hardest kinds temporarily succumb from causes unknown.

The readers of the *Monthly* know that I have some faith in growing tender kinds on hardy stocks, but so that the place of union is *above ground*, to prevent the grapes from making roots of their own, and so imparting weakness to them. My results are thus far very satisfactory, but not sufficiently well tested or established. The method of working, by which I seek to accomplish my end, is minutely described in my Appendix to the translation of *Dr. Mohr, on the Grapevine*; (New York, Orange Judd & Co.,) p. 113-115. I call the attention to this of such readers as have requested me through the *Monthly* to communicate to them the modus operandi.

I conclude my remarks again with the words of Pliny, already once made use of on another occasion :

Quantum est quod nescimus !
How much there is that we do not know !

NOTE ON APPLES IN VIRGINIA.

BY OLIVER TAYLOR, LOUDON CO., VA.

We have several varieties of Southern origin in fruit this year, and find they promise to be good keeping here. All Northern apples this year are riper than usual here, and do not keep well. Our Wine Saps, that often keep till spring, are now very ripe, whilst the Couch apple from Tennessee is quite firm, and is a fine apple. Junaluskee is very good ; now ripe.

The Nickajack is very fine, but so far does not keep well. The Romanite from the South is fine and keeps well ; several others seem to be fine and doubtless we can find just what this section now needs among varieties from the South, viz., late keeping winter apples.

The thermometer has been lower this year than usual at the same time before Christmas ; some report it at zero two weeks ago.

HENRY A. DREER'S NEW GREENHOUSE UPON PETER HENDERSON'S PLAN.

BY WALTER ELDER, PHILA.

The discussion in last year's *Monthly* about the greenhouses of Peter Henderson, the very skilful florist of South Bergen, N. J., gave its readers no correct idea of their peculiar mode of construction. Henry A. Dreer, the courteous and popular nurseryman and seedsman of Philadelphia, has lately erected two houses upon the same plan. They are seventy-two feet long, and each is eleven feet wide; and combined, they are twenty-two feet wide. The outside walls are four feet high, and equidistant between them a row of strong posts is set in the ground the same height of the walls, and capped with yellow pine plank, which serves as a *sill* for the lower end of the sashes to rest upon, and upon it is placed a gutter to carry off the water from the sashes; the half of each roof rests upon this, and the other halves rest upon the walls. The sashes are nine feet long, and meet at their tops, over the middle of each house, in the form of *Gothic arches*, and are neatly capped; the ends are in the form of the roofs, with doors in them; a gangway, nearly three feet wide, runs through the middle of each house, with a shelf on each side four feet broad, with a three-inch lath nailed upon the inner edge to prevent the plants from being knocked down in passing along the gangway. These shelves are four feet high, and by the rising roofs. plants as dwarf as Cyclamen, Mimulus, Violet, &c., may be grown at the outer edges of the shelves, and taller plants gradually to the inner edges, where plants of thirty inches tall will be as near to the glass roofs as the dwarfs are at the outer edges. There is no partition under the shelves, except the row of bare posts. In short, the two houses are *one* under the roofs, or *one* house with *two roofs*. Under one of the inner shelves is a *can*

flue, through which the smoke of the fire passes, and goes up a chimney stack at the opposite end of the house. Four feet from the flue, and under the inner shelf, is a hot water pipe, which connects at the other end of the house with other hot water pipes, that run around the house under the outer shelves against the walls. The heat is as genial as that of a mild spring day. The only thing *new* is that the houses are built against each other, and have no dividing partition between them under their roofs. The mode is a very witty contrivance. There is a great saving of material in the construction, and a great saving of expense in heating; and a great gain in space and sunlight. A general collection of plants of from three inches to three feet tall can be grown, either as a private collection, or for cut flowers in winter, or for summer bedding; in the two last Mr. Dreer deals extensively. Within the past eight years he has erected three large span-roofed houses to meet the increasing demands of his customers, and has not been able to serve them all. But these two new houses will grow an immense stock for the coming year. His cold frames for hardening the bedding plants before they are sold to plant out; and for raising young plants of Cabbages, Egg Plants, Peppers, Tomatoes, &c.—will measure six feet wide, and two hundred feet long. In this flower garden there is *perhaps* the most extensive and choicest collection of *hardy florist flowers* (and especially Bulbs and Tuberous rooted flowers) in our whole nation. The nursery of trees, vines, shrubbery, &c., is about forty acres; but not so extensive, nor is the collection so varied as in some others about the city. The seed farm is over one hundred acres. All these compartments *feed* the *seed store*, which is one of the popular institutions of Philadelphia.

NOTES ON EASTERN TOUR.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS.

No. 1.

According to promise, we shall now endeavor to give the readers of the *Monthly* a few notes on our Eastern tour.

We had various horticultural objects in view, and spent five months, from May until October, making observations. We arrived at Philadelphia on the 29th of May, and attended the "*Grand Bazaar*," which opened on that day in the new Horticultural Hall, which is a splendid building and a fit companion of the *Academy of Music* by its side, which are ornaments to any city.

The exhibition was well attended, and the scenery was fine and tastefully arranged. Here we found a living horticultural society, and the editor of the *Gardener's Monthly*, Thomas Meehan,

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No journal can become popular that is *purely practical* unless man should cease to think and become a monkey.

Horticulture is not a machine, but an art founded upon theory and experience. We connect and arrange facts according to their bearing on some law, and practice and experiment on the same. We methodically digest and arrange the facts and call it science. This is necessary if we wish to become masters of our profession and teach others.

This the *Gardener's Monthly* has endeavored to do from its commencement, to give thought to the thinking, and practice to the inexperienced. It has kept pace with the improvements of the age. The editor's keen eye and quick mind throws soul and animation into all his writings,—he handles his opponents without gloves,—yet he is willing to give them credit for what they do or discover, and is not jealous of them becoming his equal. It is this which gives the *Gardener's Monthly* such great popularity.

We visited many of the nurseries and green houses in and around the city, and found they had disposed of their large stock at remunerative prices. Robert Buist, Sr., has everything arranged in good order, with the most varied green and hot house we saw. He has a beautiful place, which has been frequently described. Mr. Dick has a fine lot of Camellias and other stock. Mr. Bisset, Mr. Scott and Allgier have large collections of roses and geraniums. Mr. Bauman of Germantown has a large collection of the old and new roses growing in the open air, which were healthy and fine for their age. Mr. T. Meehan of the same place has a fine lot of evergreens, ornamental shrubbery, with a general assortment of green house and nursery stock. Here we saw much worthy of note, and had a long chat with the editor of the *Monthly* upon various subjects, which we cannot now mention. The "*Carpenter Place*" is the most beautiful and neatly kept and arranged of any we saw, and is worth a visit to Germantown.

Seed stores are well represented by Landreths, Dreer, Buist, Maupay, Collins, and Morris, &c., all clever, social and dignified except one, and if he would lay off his aristocracy, and believe he lived in Philadelphia, and that there were outside the nobility persons equal to himself, it would add much to his social qualities and pecuniary gain. The fruit farms are not so well represented. There is ample room, with land at reasonable prices, a short distance from the city, and the market is good. The most worthy farm of note is Dr. Houghton's, 5 miles from the city, which is perhaps the largest pear orchard in the east. This orchard requires more than a slight notice from the fact not only that it is large but it is an experiment. The Doctor has adopted "high cultivation and thorough and systematic pruning." We cannot but admire his enthusiasm and determination to succeed. His success must be attributed to his indomitable energy; no other man has made such an attempt before on such a large scale, and it is fortunate for him that he made such a happy selection on the Quince as the Duchess d'Angouleme. Think of 18,000 of this variety, 5,000 in bearing, and about 15,000 of other varieties coming on, and you will have some conception of this fruit farm. It is well protected by evergreen hedges of Norway spruce, running through the orchard at short intervals and kept in the best manner. Here we can see a model place pruned according to the popular theory of dwarf tree pruning, so systematic and exact is the work done that no limb extends beyond another in the row, and each variety is alike in size, symmetry and form. These trees looked healthy and were then set with fruit for the first time. No pear was allowed to remain that showed any defect or touched another. Although these trees looked healthy under high cultivation they were not large for their age, neither have they come into bearing as soon as we should have expected of dwarf trees, and have not given the satisfaction they should have done.

We believe from our own experience and observation, that he pursues a system of cultivation which is antagonistic either to the production of the fruit or the maturity and perfection of the tree. He adopts a high state of cultivation and "has a good soil highly fertilized."

He stimulates by this process his trees to rapid growth—then because they have made so much growth, he prunes vigorously to restore them, that they may set fruit-buds and kept in form. This is a system of philosophy we must admit we cannot comprehend.

If trees are thrown into a high state of cultivation their vital energy is exhausted in the production of wood, and sometimes immature; then if we prune to overcome this wood producing tendency, we do not remedy the evil but throw this defective vitality into immature fruit-buds, and the result is unfruitful blossoms.

This we believe to be the state of the Doctor's trees at the present time, although they bore some this season, but not sufficient to warrant any encouragement for his system of cultivation. Although we differ very much in opinion on pear culture we very much respect him as a gentleman of the highest order, and deserves success for his enterprise, which we sincerely wish he may have.

We spent several weeks in the city, found all kinds of fruit high except strawberries, which were in abundance at 10 cents per quart, but this was owing to the varieties and the condition they were sent to market; good berries were scarce at 50 cents, and even saw Jucunda sell at 75 cents The Austin and Russel, in good condition were worth from 40 to 50 cents, and the market was not well supplied.

There is ample room for improvement in sending strawberries to market, and it is doubtful if it will ever be supplied with a good article.

There is but little excitement on the Grape, the Concord we believe stands at the head of the list for general cultivation.

The Apple is believed to be in a state of degeneracy, and is not a paying crop, and the appearance of the trees warrant the conclusion.

We made several visits to *Vineland, N. J.* This we had an unusual anxiety to see from the numerous reports respecting the place, and we paid more than ordinary attention to the soil, fruit, society, &c. We traveled over the tract and surrounding country, dug up the soil with a spade, examined the sub-soil at some places 10 feet deep. We can unhesitatingly say that there will be but *one Vineland in N. J.*, not that its soil or location is the best in the state, but because there is but *one Charles K. Landis.* He is to Vineland what a mainspring is to a watch. His mind grasped the whole movement of its complex organization at the commencement, and made ample provision for a self-sustaining society of the highest refinement. The very nature of the combination called forth the elements to fill every department with congenial spirits of the best order, yet each person's individuality is fully recognized, freedom of thought is tolerated and industry is the motto of all.

It is certainly a remarkable place not only from its rapid increase but from the society it has called together in its social and intellectual relations. It is the making of one grand horticultural society, laboring for each others' good and stimulated by their ambition to excess. It is one expansive fruit farm laid out in the best order and taste, with drives and walks of the finest grade, lined with shade trees and ornamented with flowers, shrubbery, and fruit trees. The soil is not a "barren sandy waste," but a sandy loam of great depth mixed with small pebbles and containing a portion of carbonate of lime and iron, and requires but little fertilization, if any, for fruit, yet good fertilization will make it the very best of soil for all kinds of products. It is easily cultivated and naturally well under-drained, and as fine a landscape as we can find east of the *Prairies*, with a fine summer sea breeze. The soil is well adapted for Vegetables, Pears, Strawberries, Grapes, and all the small fruits. Peaches are uncertain, and Apples are doubtful, yet we saw some fine specimens at Mr. Hamilton's place. Pears and Grapes looked remarkably well, and had made fine and healthy growth, and many were then in full bearing which promised well. The Concord is the most popular grape. Strawberries were mostly Wilson's Albany and they were shipped to New York by the thousand bushels. We never saw plants so full, and they were not well prepared to gather and ship them in good order, being even more than they anticipated. Half the quantity, well selected and carefully handled and shipped would have brought more money.

To families with children, Vineland offers great inducements, having good society, fine schools, plenty of industry, and few temptations to vice, and where each person can "live under his own vine and fig tree." But it requires industry and perseverance there as elsewhere.

There are many places in New Jersey, Delaware and Maryland equal in soil and situation, and many much better for Peaches, and at lower prices, but when we take into consideration the society, health, beauty and taste, it will require a lifetime to equal Vineland.

[We do not know whether to be angry with our friend for divulging the "secret which makes the *Monthly* so successful," or to be pleased with his well-meant but misplaced compliment. Like the bashful young lady who, when given a salute, indignantly asked the gentleman to take it back again, we may only get more of the same sort of trouble if we say much about it, and have concluded to remain silent and "pocket the affront." The paragraph we have stricken out, however, relates to the editor so personally that our friend will, we hope, pardon us for taking this liberty with his communication. ED.]

GRAPE NOTES.

BY MR. A. B. BUTTLES, COLUMBUS, O.

There is a slight error in your report of my remarks on the Iona, at the Pomological meeting at Sandusky, which, in justice to Dr. Grant, I ought probably to correct.

The first and last lot of vines planted were not procured from Dr. Grant, and while the total cost was reported correctly, I find that I only paid the Doctor $1,200 for 1200 vines. While my experience with the Iona in the *vineyard* has been so disastrous, I can make no better record for it in protected situations.

In the fall of 1864 I planted 2 two-year old *three dollar* vines in a lot in this city, surrounded by walls and buildings, where I have for several years ripened the Rebecca, Diana, Allen's White, Lydia and other grapes which are not generally considered reliable. Subsequently, near a dozen extra first class special, "for immediate bearing." Aged and high priced vines have been set out in the same locality, but I have had no fruit as yet, and the prospect for the future is far from encouraging. Hundreds of vines have been planted here, commencing with the time they were first sent out, and I have got to hear of a ripened bunch of fruit. As a member of the "Ad-interim" committee of the State Horticultural Society, it has been my duty during the past year to look into all matters pertaining to the culture of fruit in Central Ohio, and from my observation I must pronounce the Iona, in this section, an utter—absolute failure.

Mr. J. M. McCune set out the first vines ever planted here, and subsequently, on his farm in Licking County, he planted a large number; now he says, to use his own words, "I would not take 1000 Iona vines as a gift.

Mr. J. D. Clarke, a fruit grower and nurseryman of Lancaster, in an interesting report to me, of the Hocking Valley fruit region, where Peaches are seldom killed, and the Catawba for ten years has ripened finely, says, that the "Seedless grape and Iona humbugs do not take" in that region, and that the latter has proved a total failure. Where the vines *do* grow and set fruit, the general complaint is, that though the grapes show signs of ripening early, they fail to come to maturity. This was well illustrated by Mr. Campbell of Delaware.

In allusion to an advertisement of Dr. Grant's, where an enthusiastic and high-flown gentleman is made to say that "the Iona thrilled him with emotions of exquisite delight," he stated that this season the fruit on his Iona vines began to turn very early, and he "began to 'thrill' a good deal," but as the season advanced without a corresponding advance in the ripening process, the exquisiteness of the "thrill" became beautifully less, until finally, it disappeared altogether, on the fruit failing to ripen.

Mr. Editor, I have Dr. Grant's "Manual of the Grape," his Catalogues, his Circulars, his Special Advertisements in the Tribune, and the reports of his reporters. I have his beautiful and highly colored lithograph of a splendid double-shouldered bunch of the Iona, which ought to weigh about a pound; and through his agency, and from a commendable and philanthropic desire he expresses to disseminate correct information on reliable varieties. I have "Mead on the Grape," and I suppose I ought to be convinced that the Iona is all right, and about the only vine we ought to plant, but somehow when I think about the fruit, there is "an aching void." I look away from the beautiful picture, and the pleasant prospect, which the art of the skillful advertiser has conjured up, out upon a dreary field of vineless stakes, and the delusion is gone. These stakes are extra strong and high, for have we not been assured, that the wood alone, would more than pay the cost of the vines, the first year; but now they stand, melancholy monuments of departed friends, whose loving tendrils failed to wind around and cling to their ready support.

THE SCUPPERNONG.—THE GRAPE OF AMERICA.

BY J. M. D. MILLER, ESQ., IUKA, MISS.

Its origin, description, varieties, productiveness, soil—a wine grape—the poor man's friend, etc.

This most wonderful grape was first brought to notice by Col. James Blout, of Scuppernong, North Carolina, who found it growing wild along the banks of the Scuppernong River. The name was given by Calvin Jones, of the *Southern Planter*, in which paper Col. Blout presented it to the public, in several well-written articles. It is also said that an Episcopal Clergyman, grandfather to Gen. Pettigrew, very highly recommended it to the Southern people. It is now generally known, and universally esteemed, by all grape growers of the South, and is destined to revolutionize grape growing, and wine making, throughout America.

Description.—Bunches very small, with four to ten berries of large size, juicy, round, sweet, luscious, rich flavor. Skin very thick, light green, marked sometimes with yellow dots, tough, bears handling, keeps well, excellent for wine, splendid for the table, choice for preserves.

There are three varieties, white, black and golden hued. The white is the native, and is the one generally known; it makes an amber-colored wine. The black ripens after the white is gathered, and makes a darker wine, though there is no difference in the taste of the fruit. It remains on the vine until after frost, and will sometimes keep till after Christmas. The white berries are gathered by shaking the vine; the black kind must be picked. The golden hued yields a wine of the same color, which readily induces intoxication. The *New York Watchman*, says, "We have delightful memories of the sweet scents, borne on the breeze, as we approached Southern homes, where the Scuppernong was cultivated. We have never eaten any grape in Europe America, which suits our taste like this, so sweet, so refreshing, so innocent."

Productiveness.—It is immensely productive, surpassing all others in its almost fabulous yield, a single vine often producing annually from 20 to 50 bushels of grapes. One vine in this county is said to have yielded over 50 bushels this last year. Dr. Neisler of Georgia has one averaging 35 bushels. There is one at Mobile that produces 40 bushels, bringing its owner over $300.

Col. Ross of Georgia writes, that he has a vine thirty years old, that yields annually from thirty-five to seventy-five gallons of wine. There is one near Somerville, Tenn., producing fruit enough for a small family, and making a barrel of wine besides. Two vines are generally considered enough, in North Carolina, for an ordinary sized family. Mr. Van Buren estimates, that one hundred vines, planted on three acres of land, will yield, every year, after maturity, 5,250 gallons, or 1,750 gallons per acre. Mr. W. F. Stevenson says, this estimate is entirely too low—that 100 vines will yield twice as many gallons, at 10 years of age, and three or four times as much as they grow older. Mr. Stevenson is certainly correct, if men of undoubted veracity are to be believed. For they are as

truthful men as are to be found in America, ready to testify, under oath, that they possess vines that will yield 80 gallons each, or more. One bushel of grapes will make three gallons of wine.

Vines will live for a hundred years, continually increasing in size and quantity, if properly treated. Other grapes live but a few years.

The Scuppernong never fails to bear, never mildews, never rots, is seldom troubled by frost. There are but few fruit trees, of any kind, known to live half as long as the Scuppernong.

Soil.—Its native region is a level, dry, sandy, open soil, though it is also found in abundance in pine barrens, along hill sides, near the Tar, Neuse, Roanoke and Cape Fear rivers. It will florish in alluvial bottoms, as well as sandy plains. Thousands of acres in the South could be planted. Indeed it will grow in this latitude, anywhere that corn or cotton will grow, and is ten times as profitable as either.

An acre that will grow 30 bushels of corn will yield 300 bushels of Scuppernong grapes. It will not flourish in low, wet, heavy land, indeed no other grape will; it will perhaps come nearer to it than any other. It has never been tested in the North or West. Should it prove successful is will be a rich legacy in the hands of those who first propagate and introduce it.

Wine.—The celebrated chemist, Dr. Jackson, of Boston, analyzed 38 of the best wine grapes in America, and says, "Scuppernong wine may be made so fine, as to excel all others made on this continent." There is no higher authority known. The white variety makes a beautiful, pale, amber-colored wine—sweet, rich, luscious, fragrant, and everywhere the lady's favorite; so says the President of the Memphis and Little Rock R. R., who has been familiar with it for many years. Mr. Barntner of North Carolina, a celebrated vinist, says, its effervescing quality will render it the Champagne grape of this continent. The Black Scuppernong makes a somewhat darker colored wine, stronger and heavier than the white variety. A mixture of the two makes a wine superior to either. Col. Rose took the premium in Georgia for this mixed wine. The third variety, ripening much later, makes an exceedingly strong wine, which readily induces intoxication.

The process of wine making is very simple: the grapes of the white variety are gathered by shaking the vine over a sheet; put into a tub, or press, and the juice expressed at the rate of about three gallons to the bushel. A pint of whisky, or brandy: or two pounds of white sugar, or a quart of brandy and sugar, are added to each gallon of juice. Put into a clean barrel, or other vessel, suffered to stand for a month or more, then drawn off and bottled or barreled. The crude wine is worth $1.50 per gallon, at ten years of age from $3 to $5 per bottle. The quantity and quality are both unequaled by any other known grape in America.

The Poor Man's Friend.—It richly deserves this appellation, because it needs no pruning nor training, nor placing of vines along trellis work; because it never mildews, nor rots, and never fails to procure an abundant crop. All other grapes require study to prune, train, trellis, to prevent mildew, rot, disease or failure. Some wont grow on hill sides—others on level land. Some are slow, tender growers, needing too much care and attention for any poor man. They are all short-lived.

The Scuppernong outlives man himself. It is more profitable than corn or cotton, wheat or grass, or any other product of the earth. It is also an excellent preventive of disease, having been known in many instances to prevent bloody flux, by being used moderately at meals. One vine will pay better than ten acres in cotton, or corn, wheat or grass. Every man who owns a square rod of land, can, if he will, procure one vine and have plenty of grapes to eat for himself and family, and add annually to his wealth from $50 to $100.

Try it, reader, and you will never regret it. Should you desire to know more in regard to its propagation, its culture, time of planting, etc., I will cheerfully give it.

[We are obliged to our correspondent for this, we think one of the best accounts of the Scuppernong we have ever read. As a matter of figures, we should like to know from some one who has an acre of Scuppernongs, and has been able to get 1,700 gallons of wine therefrom. The estimates are valuable, and seem very reasonable. The accomplished results of course would be still more satisfactory. We should be glad to have further facts in propagation, as many find it hard to raise. Ed.]

TOMATOES.

BY W. H. W., READING, MASS.

Last summer I tested five varieties of Tomato. They were *Keyes' Extra Early*, *Tilden*, *Foard*, *Maupay and Perfected.* They were first grown in-doors in pots (seed sown all the same day), and planted out side by side at the same time. The soil is a good garden loam slightly manured with wood ashes.

The *Tilden* soon took the lead of all the rest, and maintained it, giving me several fine specimens of fruit before the *Extra Early* Keyes had colored a single one. It is a very superior variety.

The *Keyes* came on next about a week after the Tilden. Fruit small, but berry handsome and fine flavored. Some of the vines grew eight feet in length, and furnished fruit in abundance till frost. Seed obtained from Mr. Hovey.

The *Foard* did not grow nor bear well. It is a very handsome fruit, but not sufficiently abundant *with me* to pay for planting. Seed of Mr. Buist.

Maupay is a fine variety. Remarkably smooth, solid, heavy and uniform in size. I have never found anything better in the Tomato line, unless I except

Lester's Perfected. This deserves its name. Its flavor, like its color, is a little peculiar, and in my judgment better than any other Tomato I have ever tasted. It bears well, but is rather late.

My experience would lead me to say that with *Tilden*, *Maupay* and the *Perfected*, one would be as well supplied as possible with this delicious and healthful fruit from the very commencement to the close of the season.

EDITORIAL.

THE SUN'S RAYS.

It is well worth remembering in all our horticultural operations, that nothing is perfect. Many of us contend that if we can only see the *principles* on which all our operations are based, the practice is easy. But to borrow an illustration from the Book of Job, whenever the Sons of God go up before the Lord, Satan presents himself along with them. There is always a something going together with every good idea ready to mar or destroy it. The best we can do with Horticultural principles is to study well the good points and the bad ones; strike an average between them, and let the extremes go. The practice comes down to the homely saying, "of two evils choose the least,"

These reflections occur to us in passing review of what has been said in English journals and our own on *double glazing* of glass structures, which, as most of our readers know, means putting an extra covering of glass over another to keep in the heat during cold weather. The rabbets are made higher than in ordinary glazings, and the glass laid one or two inches above the other. The good principle which this undoubtedly secures is, that you save considerable in fuel. Mr. Strong thinks enough can be saved in one year to pay for the extra glass. But there is a little Satan in this good calculation, and it is in the light question.

Our own experiments have not been on a large scale, limited in fact to a single hotbed sash at the Bartram Gardens, and on a smaller scale at Springbrook, fifteen and seventeen years ago; but clearly plants did not grow as fast under these as with the same temperature and all other things except the single glass. There seems to be a "virtue" in the unobstructed sunlight which the saving of heat, or any other grace vouchsafed to vegetation fails to accomplish. We are not sure, but are strongly inclined to believe, that where winter growth is an object, double glazing will not be found "to pay."

In discussing economical principles of glass-house buildings, we too often lose sight of this sunlight question. The dollar near our eyes blinds us to the sun's rays in the distance. Houses are built flat roofed because it takes less lumber and less glass to enclose a given space than a steep roof, but in it we have no winter flowers of consequence, while our neighbors with the steep pitch have all the bloom they want. And why? The sun's rays are there! And again, to save side lights, we start our rafters right down from the wall plate, but even though we have the steepest kind of roof, we cannot get the flowers that old fogy has over the way. Thousands build

span roofed houses, and build them wide in order to save the back wall of a lean-to, and to enclose the "maximum of space at the minimum of cost," and find they have only a minimum of flowers in the inverse ratio of expense, while the solid old boys whom young America styles as having more money than brains, have more flowers than we do.

Our forefathers had many good practices for which they could not account, and they religiously avoided many things with no more reason than the poor boy who hated his schoolmaster.

"I do not like thee Dr. Fell;
The reason why I cannot tell,
But this I know, and know full well,
I do not like thee Dr. Fell."

But we have become an age of reasoners, and the old folks must tell us the why and wherefore of all they do. So Filius asks Pater why he has staging in his house? "Plants grow best on them." Filius thinks the reason must be that the ancients supposed they got more room, but he sees there is really less available room than on the level table. The Patrician houses are henceforth leveled to the ground—the modern "table" introduced—but notwithstanding all these modern improvements, the plants don't grow. The old folks had plenty of flowers, but the "boys don't seem to get along." The sun's rays did the handsome thing for the stage plants,—losing this they pine away.

And now let us remember that on the other hand there are many other things to be thought of besides the sun's rays. There will be many cases in which these are an evil—good in themselves, but an evil for some particular object which we wish to gain. Yet let us never forget as a principle to be taken advantage of whenever desirable, that mere light and heat alone can never give the vitalizing influence the sun's direct rays can.

HOW TO HAVE HEALTHY GRAPES.

When we returned from our extended trip West, last year, it seemed to us perfectly clear that "how to grow healthy grapes" could be summed up in a nut shell. Under the above heading we explained our views in page 336 of our last volume.

It has afforded us great pleasure to find our remarks have commanded universal attention and general approval.

In summing up the new discoveries of the year, *Hovey's Magazine* thus records the fact and nearly in our words, with some additional observations, which will interest our readers who read our original remarks:

"The failure of he grape crop has naturally instituted inquiries as to the cause, and although it is admitted that it has been from the late spring and cold wet summer, the question arises if we may not secure a fair crop under such circumstances, which are likely to recur again. Thus the West—which last year suffered as the East has this—have a plentiful supply this year, never better, even the Catawba being quite free from rot. This fact shows conclusively that moisture in excess is fatal to the grape crop, and knowing this, it will be the main object of the cultivator to guard against it. We cannot combat with the season, but we can and should pursue such a course of culture, as will not aggravate its effects.

The lesson taught by this is, that we should avoid every thing in grape culture which has a tendency to maintain an excess of moisture around the roots. Deep trenching and high manuring must be discarded, except in thin and elevated localities, and an abundant drainage supplied, which will carry off as quickly as possible the surplus water. Sites should be selected which have a gentle slope to carry away the surface water, before it can find its way thrcugh and saturate the earth; coarse materials and sandy soil should be used when the ground is flat; and all precautions taken to keep the soil warm and dry. The roots will then have energy and vitality enough to throw off the mildew, which attacks only weak vegetation, as we see it attacks the Delaware and weaker growing sorts first. As to vineyards, to be sure of success, they should be on side hills, as they are in the Pleasant Valley region, where the grapes, wherever shown, have carried off the prizes this year."

NOTES OF WESTERN TRAVEL.

Among the country seats around Cincinnati, few interested us more than the residence of Joseph Longworth, Esq., son of the late Mr. Longworth, who received us with cordial kindness. The house is in the middle of some acres of beautifully arranged grounds, and these again surrounded by a magnificent natural park which, it would be difficult in Europe, where all is art, to believe had not been originally aided by the improving hand of man. Grand avenues, tasteful clumps, and single trees developed into beautiful proportions abounded—some of these trees of the most astonishing size. One white oak was *twenty-five feet in circumference* four feet from the ground, and was was, we guessed, about seventy feet high, with a clean straight trunk perhaps half that height. Other very large trees abounded, not only of Oak, but of Elm, Linden, Buckeye, &c. Nothing will give a better idea of the richness of the cretaceous soil about Cincinnati than the enormous growth of its vegetation. Crossing dry hills with Mr. Longworth, we could not help noticing the common Purple *Vernonia*, sometimes higher than our heads, and this too of a plant usually in the East confined to low wet ground, and here not only on a dry hill, but in one of the dryest seasons known. The natural fertility of the soil about the city is, however, fast wearing out by bad farming. We hear from Mr. Reemelin that land which once produced eighty bushels of corn to the acre, was thought to do wonders at forty now, and instead of manuring, the old stagers concluded farming "would'nt pay," they therefore took to "running for office" and left farming to "the Dutch," who were fast becoming the wealthy land owners of parts thereabouts.

Mr. Joseph Longworth is a rare lover of trees. The oak is his especial favorite. The grounds are full of beautiful specimens planted by his own or his father's hands. The Pin Oaks are especially fine; clothed with branches to the ground, indeed sitting on the surface like a richly furnished Norway Spruce, then tapering upwards twenty-five to fifty feet high like a real coniferous tree, nothing arboricultural could possibly afford more pleasure.

Near Mr. Longworth's is the residence of his worthy nephew, Captain Anderson, to whose energetic enterprise in the wine interest we have already alluded. The family love for horticulture is also happily inherited here. Mr. A. is very fond of horticultural experiment. Here we saw for the for the first time the "Bolmar Patent" of making Peach trees healthy. They are planted on the surface of the ground, and a few loads of earth piled up, cone like, completely enveloping the stem. The branches came out about four feet from the ground, and the soil was piled up to these branches. Along side were trees planted in the usual way. The trees on the Bolmar Patent, were at least double the size of the others, and in every way superior. The patentee claims 15 cents per tree. We do not know that there is anything so new in this idea to entitle the patentee to exclusive rights—but this experiment shows what the *Gardener's Monthly* has so repeatedly contended for in fruit culture—and yet what some few cultivators yet effect to ridicule, that the system which best encourages the roots of a tree to keep on the surface of the soil is the best system for the cultivator.

Mr. Resor's place is beautifully laid out, and, if any fault can be found in this respect, it is only that the style of beauty is the same as in most others. This is usually the result where there is one master mind in any locality. There is a mannerism in the prevailing taste, which it is very hard to break away from. Mr. R. has a very successful iron grapery, which has been in existence a number of years. The objection to these have been, that the expansion of the iron by hot weather breaks the glass, and the contraction in winter loosens the putty. Mr. R. has found neither of these results; nothing could prove more satisfactory. The worst cases of Fire Blight in the Pear tree we ever saw were here. Not merely large branches, but nearly whole trees of great age are carried away.

In this neighborhood we saw for the first time a Fire Blight *on the Quince*. We have not seen or heard of it elsewhere. The fungus attacks in spots, and evidently spreads in precisely the same manner as the one in the Pear tree, but whether the same species we cannot say.

Mr. Robert Buchanan's place is near Mr. Resor's. With the plain and unassuming manner so characteristic of most of the intelligent Cincinnatians with whom we came in contact, Mr. B. adds that charming and gentlemanly ease of manner which the consciousness of a long life of usefulness always gives. His three-score and ten we should judge has passed away; but, looking down from the high land he has chosen for his own home, on the magnificent prospect every where about him, over to the pretty cemetery—the child of his own creation, and in whose beautiful arms he expects to lie down to his final rest; to the river down whose unexplored waters he thirty years ago took the first of that since mighty fleet of steamboats that make a city of the stream, and Cincinnati what it has become on all about him, in which his own mind has been impressed and taken a living shape and form; he may well feel satisfied that he at least has "done that work which was given him to do;" and we could not but feel a desire, selfish it might have been, but no less sincere, that when we approach the autumn of our life, it may come to us as pleasantly in this way as to him.

SCRAPS AND QUERIES.

The Honey Locust.—*W. S. L., Fostoria, O.* asks: "(1.) Have you seen the Honey Locust growing in hedge, and what is your opinion of its value? (2.) Does it sucker, or do the seeds scatter and grow so as to be troublesome? (3.) What is the best distance to plant them? (4.) Would it be best to plant the seeds in the hedge row, or in seed beds and transplant? (5.) How many seeds are there in a bushel? (6.) Are they difficult to germinate and sure to grow? I am not quite satisfied what to grow. Some portion of the land is flat and rather moist, with clay, and I am inclined to think the Osage Orange might not thrive on it, while the Honey Locust is all about me doing well, and making, in some instances, large trees.

Dr. Warder says to me, if you plant them do not set them nearer than 3 feet. Osage is growing near me, and have never winter killed, but the land is all dry and gravelly where they are growing."

[(1.) In poor or cold soils it is very much better than Osage Orange. (2.) No. (3.) 6 inches. (4.) Sow the seeds in a garden bed and transplant to fence row the next spring. (5.) Some seeds will fail. You may calculate on 15,000 plants from a bushel. (6.) If not allowed to dry, they grow easy—if once dried, they need soaking before sowing, and then some will lie over a year before sprouting. We do not understand Dr. Warder's recommendation of 3 feet, if for *a live fence;* possibly he means them to grow up to a wind screen.]

Cape Bulbs in the open air.—*F. S., Tipton, Ind.* asks: "I wish to be informed whether or not the Ixias, Sparaxis, Watsonias, Anomathecas and Babianas, (or any of them and which) may be treated as summer blooming bulbs, like the tender Gladiolus; i. e. whether or not they may be kept out of the ground during winter, and set out in the open border in spring for summer blooming?"

[Ixias, Sparaxis, and Watsonias, may be kept dry and planted out in spring; but as they bloom naturally in winter or towards spring, we do not know whether much satisfaction would result, but it is worth trial. Anomatheca, Tritonia, Babiana, and Schizostylos, do not do so well out of the earth and quite dry. The taller we believe would bloom early enough in fall to be a good border plant.]

Mr. M. B. Bateham, we see is announced as a regular reporter of Horticultural Society's proceedings for *Ohio Farmer*. Col. Harris already gets up a first class journal, weekly, but this arrangement will add to its interest.

Irish and Sweedish Junipers.—*E. M., Harrisburg, O.* writes: "I send you two specimens of the Juniper, the dark variety is sent out by Mr. Buist as Sweedish. Ellwanger & Barry describes the Sweedish Juniper as of bluish green foliage. But Hoopes & Bro. sends out the light color for Sweedish. Hanford also sends out the light colored as Sweedish. Buist calls it the English, what say you?"

[The light colored is the Sweedish—the bluish green the Irish.]

Improvement in Native Gooseberries.—A correspondent from Kansas City, Mo., informs us that he has been experimenting with the Native Gooseberry of that region, and finds very much to encourage him.

We are glad he is turning his attention this way. No doubt much might be done with most of our native fruits if people would only try.

Keyes' Prolific Tomato.—*A. P., Lynchburg, Va.*—Is the Keyes' Prolific Tomato worthy of general cultivation as a market variety in preference to any other variety, if you please give me your opinion as to its merits?

[The Keyes' is a very good early kind. In many cases it has not proved much earlier than the large Early Red, and is generally smaller.—You had better experiment a little before depending on it exclusively.]

Death of a Gardener.—The following paragraph from a Philadelphia city daily tells the story of one who was well known in Philadelphia, Pittsburg, and elsewhere, as one of the best practical gardeners in the United States:

"Suicide.—Jerome Graff, residing in Coates street, below Twenty-fourth, shot and killed himself, last evening, in a fit of temporary insanity. He was 45 years old. The coroner will hold an inquest on the body, to-day."

West Indian Papaw.—*F. S., Tipton, Ind.*, says: "In the January number of the *Monthly* under the head of "Notes of Western Travel," you notice that one Dr. Carter, of Columbus, O., has a very fine plant of the West Indian Papaw, &c. Allow me to use the *Monthly* as a means to inform Dr. Carter that Carica Papaya is a diœceous plant, i. e. that it belongs to a family of plants of which the one individual has only male, and the other female organs, and that he therefore has to have a male and a female plant if he wants to raise that delicious fruit.

It is to be pitied that our enterprising importers of flowers and fruit-bearing plants have not yet found out the importance of the *Carica Papaya*, both as an ornamental and as a fruit-bearing plant, the culture of which is so easy. I would long ago have bought me a pair of them, were they *to be had in this country.*"

Duchesse D'Angouleme Pears.—*Mr. Wm. Bamford*, one of our subscribers at Trenton, N. J., has a Pear tree in his yard, from which he has gathered two barrels of fruit. Recently, he sent to Philadelphia, 237 Pears, gathered from the tree, and received the handsome sum of $50 for them.

Lonicera Halliana.—*W. B. S. & Co., Syracuse, N. Y.* Lonicera Halliana is nothing but *Lonicera Japonica*, a very old species.

It has, however, never got beyond the gardens of the curious, into the regular nursery trade under its old name; and as it is really a desirable thing, intermediate in appearance, between the one known as the shining leaved Japan (*L. brachybotrya* of gardens) and the Chinese (*L. flexuosa*), the introducers have done a good thing though at the expense of an addition to the evils of synonymy.

Syringa Josikæa.—*F. S.* says: "If it is of any interest to any of your readers to know the native country of so valuable an ornamental plant as the *Syringa Josikœa*. I may be pardoned for correcting 'M, in the *Farmer*,' whom you copy under the caption 'New and Rare Plants,' in the January number of the *Monthly*, with respect to that plant. M. says the plant had been discovered in 'the Siebenbergen,' and adds 'we presume the mountains on the Rhine so named.' Just this presumption is errronous; Siebenburgen is the extreme southeast corner o Hungary, while the mountains on the Rhine he refers to are the 'Siebengabirge.'"

Geographical Distribution of Plants.—Amongst our last summer's correspondence, came the following very interesting note, which we laid away, until towards spring, so that just after another winter it would be suggestive to others to record their thoughts on the same subject. It is in season now:

"How remarkably plants behaved last winter. Many from high latitudes perished; many were badly hurt. I had a Taxus Canadensis in a sheltered corner killed outright, while Piceas Morinda and Pinsapo were not in the slightest degree injured. And Spirea Lindleyana, which in but moderately hard winters is killed to the ground, had only the tips of its canes blasted. How curious that a native of Afghanistan should have stood last winter's storms and low temperature better than our Abies Canadensis—natural to this very neighborhood! Does this quite comport with the idea that similar organic forms were at first scattered broadcast upon earth, and that only such survived and developed in the several regions of the earth as found in those regions the necessary conditions of life and growth? Why then are not the Piceas Pinsapo, Cephalonica, and other plants which might be named, found in the forests of Northern Europe and even America?"

Grapes for a Cold Vinery.—*E. W. G., Centrebrook, Conn.*—Will you inform me through the columns of the *Gardener's Monthly* what varieties of Grapes, white and black, say two or three of each, would be most profitable for a cold grapery, taking into consideration certainty of crop, quality and productiveness.

[3 Black—Black Hamburg, Lady Downe's Seedling, Black Frontignac. 3 White—Early White Chasselas, Golden Hamburg, Buckland Sweet Water.

After one has Black Hamburg, and White Chasselas, for 'ease of culture, certainly, &c.,' are selected, there are so many others that are pretty good, that we expect Grape growers would not be unanimous in their preference for our list.]

Planting Pear Trees in Grass.—The *American Journal of Horticulture* says: "We have known some to have a fever for a Pear orchard, and thereupon rush to some nursery and buy a large lot of dwarf and other Pear trees, and set them in holes eighteen inches broad by nine inches deep, dug out of tough sward. Their dreams dissipate after a year or two, as the trees give up the ghost, thereupon he declaims against the unprofitableness of fruit culture," which is a very just observation, if not the best of grammar. The Pear culturist will, however, find that after the trees have been well cared for, it will be better for the Pears, and more profitable to him or her, to *well care* for the Pear orchard in grass, than in any other way.

Annual Flowers for Bouquets.—*P. J. T., Wilkins, near Pittsburg, Pa.*, asks: "Will you oblige a young Florist by giving a list of the annual Flower Seeds best adapted for cutting flowers, for bouquets, for sale in market. Most I tried last summer were too soft and faded soon after cut."

[Ten week stocks, double Zinnias, Acroclinium roseum, Sweet Alyssum, Asters, Browallia Alata, Cacalia Coccinea, Candy tuft, Centaureas, Larkspurs, Erysimum Peroffskianum, Gaillardias, Globe Amaranthus, Helichrysum, Senecio Jacobea, Blue Lobelia, Tagetes Patula, Mignonette, Palafoxia Texana, are amongst the best.]

Geranium Cardinal Wiseman.—*A Pottsville, Pa.* correspondent says: "I have received from England, per Mr. B., a few cuttings of a new Geranium named "Cardinal Wiseman." It is represented as being one of the most effective bedders and having the most brilliant colored flowers of any geranium grown the past season. From what I learn it must have been pretty well disseminated, as every place of note had a bed of it growing.

Now what I wish to ask through the pages of the *Monthly* is whether any of your correspondents who visited Europe last year know anything about it. I mean of course practical horticulturists who understand the difference between a good thing and a worthless one."

Acknowledgements.—We usually acknowledge privately many kind letters received. The past months love letters have so poured in on us, that we have, from sheer want of time, had to seemingly slight some of our admirers. Hope they will not abandon us altogether. We hope to do better for them one of these days.

Mountain Ash and Lilac Stocks.—*G. W. T., New Brunswick, N. J.*, says: "For what is the Mountain Ash used as a stock? On what can we work the Lilac to obviate suckering? And how propagate the Calycanthus? It does not layer good with me."

[The Pear is dwarfed on the Mountain Ash. Syringa Josikæa makes a capital stock for the Lilac, but it suckers a little. Calycanthus will not layer—raise it from roots.]

Berberry as a Hedge Plant.—*G. W. T., New Brunswick, N. J.* says: "The Berberry is attracting some attention in some parts of the country as a hedge plant is going to "kill" all the other "Richmond's in the field." What do you think of it?"

[We have not seen a specimen, but judge it may do pretty well. It is hardy, stiff, thorny, and grows tolerably fast.]

Pomological formula of description.—*Josiah Hoopes of West Chester* issues, on the part of the Pennsylvania Fruit Growers Society, a circular in reference to Pennsylvania fruits.

We hope all Pennsylvania fruit growers will send for a circular, and help him as he asks.

False Clarke Raspberry.—A correspondent sends us good reasons for supposing some parties are putting out something else for this plant. It will be well for purchasers to look after some guarantee from the seller, that he is getting the real thing; and, indeed, in view of the frequency of mistakes, guarantees, more frequently than they are sought, might be useful in many other things.

American Woods.—A Paris letter says:—"America has never learned to appreciate the beauty and the value of her forests. In this we had a most valuable lesson at the pavilion of the Empress. The furniture and the panneling, window-casing, etc., were made of the wood of the sycamore (buttonwood) and certainly for lightness and beauty we never saw it excelled. So far as we know, this wood has been inexorably condemned to the fire in our own country, but as ornamental in our railway cars and elegant furniture, if we mistake not, it would have a most valuable purpose.

BOOKS, CATALOGUES, &C.

Journal of Horticulture.—Our young friend continues to chew the fustian weed, squirting the juice over "all the Horticultural Magazines combined." We suppose this is Boston manners, and "to be endured what can't be cured."

The February number is, however, a good one. M. P. Wilder describes the *Newhall Pear :*

"Size large, above medium ; form obtuse pyriform, inclining to oval or egg-shape ; surface a little irregular and uneven ; stem three-fourths to an inch in length, inserted without much cavity ; calyx small, partly closed, set in a corrugated basin, scarcely below the apex of the fruit ; skin smooth, yellow at maturity, with a few traces or blotches of russet, sometimes with crimson dots and a cheek of blush on the sunny side ; flesh melting, very juicy, buttery, and tender ; flavor sweet, tolerably rich, with a musky aroma resembling the Bartlett. Season, last of October ; quality, "very good ;" tree hardy, healthy, and prolific.

The Newhall Pear is one of the varieties raised from seed sown at same time with Clapp's Favorite ; the original tree still remaining in the collection of Messrs. F. & L. Clapp, Dorchester, Mass.

The Best Pears in Southern Illinois. — Mr. Parker Earle says Doyenne d' Ete is the best early. Beurre Giffard is getting popular. Bartlett succeeds well. Louise Bonne de Jersey is profitable when rightly grown. Duchess d' Angouleme proves the pear of pears when thinned, but with Beurre d' Anjou they need not want a better thing in Egypt in its season. Lawrence and Easter Beurre complete his list.

Twelve good Phloxes.—Mr. Parkman gives the following as his favorites :

Duguesclin, bright rosy crimson, very large flower. *Rubra superba*, deep blood-red. *D'argent* white, with a bright-purple eye. *Madame Marseau*, white, with a carmine eye, beautifully shaded. *Madame Flandres*, salmon. *President Morel*, deep purplish-red. *La Reine Louise*, slaty purple, shading into a white centre. *Triomph de Twickel*, striped red and white. *Wilhelm Schule*, rosy purple, white eye. *Mrs. Standish*, pure white, bright crimson eye. *Madame Sueur*, crimson centre, shading into a white edge. *Evening Star*, purplish rose, white and crimson eye.

General Grant Tomato is thus described by C. M. Brackett :

The fruit is above medium size, measuring from three to four inches in diameter, and grows in clusters ; form round, slightly flattened, very regular, symmetrical, and rarely ribbed or wrinkled ; color brilliant glossy crimson ; flesh unusually firm, solid, and free from water,—more so than any variety with which I am familiar ; skin remarkably fine, smooth, and shining ; productive and well flavored ; bears carriage well, and keeps in good condition a long time after being gathered.

Azalea.--The following is Mr. Rand's selection : *Decora, Indica alba, latritia, Beauty of Europe, crispiflora, exquisita, Gladstanesi, optima elegans, Fielder's White, Iveryana, narcissæflora, Vesta, Murrayana, magnificens, Duke of Devonshire, Stanleyana, Toilette de Flora.*

The Horticulturist for February comes to hand with some beautiful illustrations of country seats. The magazine has now passed its majority, being now in its twenty-second year.

Propagating Quinces.—Horticola says, in *Horticulturist*, by tying quince cuttings in bundles, burying them upside down, four inches under ground, as described in the *Monthly* by Mr. Patrick, of Terre Haute, for grapes and their planting in Spring, succeeded very well.

Pruning to promote Earliness.—In a recent number of the *Gardener's Monthly* we gave a paper to show that ringing the bark, root pruning trees, taking the leaves off in summer-time, or anything tending to impair the vitality of a tree induced early bearing—that a tree which would, in vigor, be say ten years coming into bearing, would come into bearing in, say, five by "hard treatment," and we concluded, from some facts given by the *London Gardener's Chronicle*, that what we know to be true in a series of years, might reasonably be true of one year—that treatment injurious to perfect vitality might induce precocity in one year, as well as in a series of years. This was indeed proved by the well known effects of ringing, which made the bunch of grapes ripen earlier. In the February *Horticulturist*, Mr. John Ellis, whom all our readers know as one of our best grape growers, has an article on this subject, in which he recommends the reader to think twice before he acts once—advice which we cordially endorse.

NEW AND RARE PLANTS.

Acer sanguineum.—Aceraceæ. A very ornamental slender growing deciduous tree, with somewhat erect branches, the leaves digitately 7-lobed, with short-toothed suddenly acuminated lobes, and of a purplish-red color, resembling that of A. atropurpureum. It is the same as A. polymorphum palmatum saguineum. Native of Japan.—*Rev. Hort.*

New Clematises in England.—The best of the hybrids are, as we learn from *The Field*, *C. Jackmanii* and *rubroviolacea.* These two kinds have already become abundant enough to be cheap, But several newer kinds have been produced, which command fancy prices, *e.g.*, *rubella*, *Prince of Wales*, *Lady Bovil*, *Thomas Moore* and *Mrs. Bateman.*

New Golden-Leaved Bedding Plant.—*Fuchsia "Golden Fleece."*—This very beautiful and effective plant is adapted for all decorative purposes in beds, or ribbon rows, and by its free, yet densely compact growth, equally suited for front or second rows ; its slightly decurved branches retaining a dwarf habit, from six to nine inches, as required, throughout the season. The early summer leaf-tint is an uniquely rich bronze yellow, changing to a pure gold in midsummer and autumn. In general effect it is less formal and more equal in growth than the "Golden Feather," (Pyrethrum), and superior in effect to the whole self Gold-leaved section of Geraniums. Out of forty plants in one row, there was no perceptible difference in height and effect through the summer, and increased in the richness of its color until October.—*Cottage Gardener.*

New Roses.—Among the newer ones offered this year in American catalogues, we note the following :

Adrien Marx—bright cherry red ; Charles Verdier—bright rose, petals, bordered white ; Glorie de Monthlaisir—brilliant red ; Madame Puliat—beautiful deep rose ; M'lle Marie de Villeboisnet—tender rose ; Jules Cesar—deep cherry red ; Madame Chas. Baltet—beautiful clear tender rose, seedling of the rose, Louise Odier ; Fisher Holmes—brilliant scarlet ; Carl Coers—large deep purple ; Fanny Petzold—clear rose, light shade of white ; Lacepede—brilliant clear red ; Pline—reddish velvet violet ; President Mas—brilliant reddish violet, shaded violet purple ; Souvenir of Dr. Jamain—bluish violet, very fine ; Glory of Waltham—large purple red ; Mme. Emile Boyau—large, full, flesh color ; Triomphe de Rouen—brilliant carmine rose ; reverse of Petals Violet Rose.

New Chrysanthemums.—A report of the Royal Horticultural Society Meeting says :

"Mr. Salter sent several specimens of his seedling Japanese Chrysanthemums, which seem as much to astonish as please those who saw them. They were, however, so appreciated by the Floral Committee, that four of them—namely, Red Dragon, Aurantium, Comet, and Wizard, were awarded first-class certificates. The flowers are most curious, and the plants, when under good cultivation, will prove most useful for decorative purposes in the conservatory. The singular form and outline of the flowers will make an excellent contrast with those flowers with broader florets which are now so much used. They are later-flowering than the garden varieties, which will make them very desirable. Every shade of color that the Chrysanthemum assumes seems to be represented in these Japanese seedlings, which were raised fromChrysanthemum roseum punctatum."

Three Plants for Winter Flowering.—A correspondent of the *Cottage Gardener* says :

"I often see questions from your correspondents, asking for good plants to flower in the greenhouse in winter. Allow me to recommend two or three, which, though very beautiful, are seldom seen.

Saxifraga ligulata.—A hardy plant, but flowering in the winter ; the flowers do not come to much out of doors. In the greenhouse, it bears many racemes of large flowers, pure white at first, but afterwards turning pink, with pink stamens. It is very useful either for nosegays or to wear in the hair.

Sparmannia Africana.—A beautiful shrub, now in flower, with large and rather coarse leaves, and bunches of pure white flowers with golden and red stamens.

Fuchsia Dominiana.—Flowers in the way of Fuchsia fulgens, but the flowers are of a brilliant scarlet, and the stems and undersides of the leaves dark red.

DOMESTIC INTELLIGENCE.

Cedar Hill Early Tomato is described in the *Horticulturist*, as raised by Mr. John Hill, of Albany, N. Y. It "ripened the latter part of July, in advance of two or three other varieties," and is represented as superior.

Perry Russet Apple.—The Perry Russet derived its name from the town of Perry, Wyoming County, N. Y., where it originated, as we suppose. Some years ago, Mr. Hodge, nurseryman, at Buffalo, sent it out as Winter Russet, a wide synonym of the English or Poughkeepsie Russet.

The fruit varies in size from medium to large, roundish, tapering to the eye. Color, quite yellow with bright, thin russet. Flavor, brisk, lively, tart, and very good for eating or cooking; ordinarily, keeping till January. Tree, very hardy; a good tree every way, forming a dense, round head. At the East it had the reputation of a very heavy bearer; but at the West we think it has proved rather a shy bearer. Mr. F. K. Phœnix, when in the nursery business at Delevan, Wis., some years ago (and who was formerly from Perry, N. Y., where it originated), propagated and disseminated it to some extent. We have heard nothing concerning it since we left Wisconsin, twelve years ago. Its merits as a bearer should, by this time, be thoroughly known there. The tree was considered one of the hardiest among late Fall or Winter Apples. Will some of our old Wisconsin fruit-growing friends, who have tried it in the orchard there, report as to its hardiness and bearing?—*Iowa Homestead.*

The Strawberry Tomato.—This tiny looking tomato is becoming a favorite among many good housewives for preserves. Its delicate flavor, and its smooth skin renders it valuable for this purpose.—*Maine Farmer.*

Wagener Apple.—We have had the Wagener Apple in cultivation for the last eight years in the orchard, and for the last three years in the nursery, and in both situations on the open prairie. It has proved perfectly hardy with us, both in the nursery and in the orchard. As to growth, we find it medium—not so strong as the Benoni, Ben Davis and some others; yet stronger than other popular varieties we might mention. It fruits earlier than any other variety. Some of our trees in the nursery row only three years old from the root graft, fruited this season, and ripened their fruit.—*Iowa Homestead.*

Gathering Apples.—Spread a sled load of straw under the tree when the limbs being jarred, the apples fall on the straw and are not bruised in the least, and will keep as perfectly, or nearly so, as when hand-picked.

This plan has several advantages:

1st. It is done with greater rapidity.

2d. There is no necessity of a ladder, which often damages the tree.

3d. There is less danger to the person engaged in gathering.—*Asheville News, N. C.*

A New Conifer from Arctic America is described by Andrew Murray in the *Journal of Botany*. It is the most northerly tree on the North-West coast, being found in a latitude nearly seven degrees further north than the tree limit of the Eastern side of the American Continent. It is allied to *Abies alba.*

The Fall of the Leaf.—M. Trecul, in a paper on *Terebinthacœa* in *Memoires de l'Academie Francaise*, says there is a process like that which precedes the shedding of horns in animals, which accompanies the fall of the leaf. Cells multiply at the base of the leaf, obstructing the flow of sap, and thus the leaf dies by evaporation.

To Destroy the Strawberry Grub.—A writer in the *Circular* says:—"On grounds that are infested by this insect, and perhaps by others, make numerous piles of dry brush, and other material, and then watching the season when the beetles begin to rise, and, in the early part of the evening, fire several of the brush-heaps, and the beetles and all other insects that chance to be on the wing, being dazzled and bewildered by the light, fly into the fire and are consumed. The next evening, fire other heaps, and so on. The top of a small tree should be stuck in the ground in the middle of the pile, against the branches of which the beetles will strike and fall directly into the fire. If farmers and cultivators could be persuaded to practice some such course annually, it would be found to be very effectual in diminishing the numbers of these depredating insects, and largely increasing all kind of crops.

Tree Planting in Chicago.—*The Prairie Farmer* says:—"It is our conviction that Chicago will compare favorably with any city of its age for shade trees, and when it is known that almost all are trees from the forest, from 3 inches in diameter up to the one mentioned above, it tells its own tale as to their doing well from the woods.

A Cheap Fertilizer.—First gather any quantity of swamp muck into a pile to dry. Measure off six barrels of this (or any other rich black earth) into another pile, and add the following salts, previously dissolved in a barrel or more of water, viz: 40 pounds nitrate soda, 60 pounds sulphate ammonia, and ½ bushel common salt. Then add one barrel of ashes, one barrel of plaster of Paris, and one barrel ground bones. Mix all well together and use in the same manner as Peruvian Guano.—*Southern Cultivator.*

An Edible Fungus from Tahita is an article of commerce in the South Pacific. It grows on trees, and called by the natives "Rats-ears." The Chinese buy it for soup at 20 cts per ℔.

Geographical Distribution of Senecio.—This genus is more widely distributed than any other. It is all over the world, and embraces nearly 1,000 species.

The Valley of Kanawha is fairer and fatter than any Vale of Tempe. It lies from east to west about 100 miles long, by an average width of about 5 miles, containing only about 500 square miles, lying between two ranges of sugar-loaf hills, accessible at every point by roads needing no grade for any mountain ridge. There is no locality of the globe containing the same resources of wealth in the same compass. Its cannel and other bituminous coal is incomparable; its beds of iron inexhaustible; and its salt springs and wells can supply the continent; with all its coal and heavy forests, it needs neither for fuel to boil its salt—it has gas enough to blaze earth and air; with all its coal, wood and gas, it needs neither for the light of lamps—it has naptha oil in more abundance than flows from the blubber of all the Leviathans of the great deep; and its kerosene oil, for all the purposes of lucubration and illumination, is driving sperm from the markets of the dry lands into the sea. The whales will never again be vexed so much by the harpoons of the fisheries. The gush of its water and the gust of its gas from the salt wells and springs of its salines, remind us that it is *not* Tempe, though by the shudder of the feeling that some of its spots are the very tops of the funnels of the chimneys of Hecate in her form of Proserpine. They are more than interesting; they are exciting. The temperature of the Valley is warmer than Eastern Virginia—*South'n Planter.*

The Wax Myrtle.—"We find the following amongst our exchanges, going 'the rounds:'

'We read of a species of Wax Myrtle, growing on certain bayous in Louisiana, from which berries enough may be gathered in a day to make eight pounds of tallow, much harder and purer than common tallow.'

This plant grows along the whole Atlantic coast, from Canada to the Gulf of Mexico. Along the shores of New Jersey it is known as 'Bay Berry,' and is not only useful for its wax, but is also used to feed cattle, and is said to fatten them easily. The outer coat of the berry exudes a large quantity of cerous matter, which, on boiling, floats to the top, and is skimmed off like cream. Its botanic name is *Myrica cerifera*, or the wax-bearing Myrica. It is probably our plant has not had as much made out of it as it is capable of affording. A form exists in Europe, the *Myrica gale*, commonly called 'Candleberry Myrtle,' yet the French, who are ever alive to the value of the economic productions of the vegetable kingdom, seem to have an idea that our plant has more value than theirs. We know of a seed firm who has this year received an order for one hundred pounds of our wax myrtle seed for French experimentalists. Our sharp Jersey friends should keep an eye on it.—*Forney's Weekly Press.*

Making Cider Vinegar.—The *Country Gentleman* says: at the farm of J. Woods, West Chester County, New York, good Apples are worth three dollars per barrel for this purpose;

and so excellent is the vinegar manufactured from them, that it sells for sixty cents per gallon in New York City, when the common market price is only thirty cents. The following is the process adopted: The cider, after being made, is stored in the cellar for winter. A large number of casks, each with a capacity of two hundred gallons, have been kept on hand many years, nearly half filled with the best vinegar—some of which were shown me, fifty or sixty years old, having been continually used for this manufacture by the father and grandfather of the present owner. On the approach of warm weather, from two to four pails of cider are added to each of these casks per week, by pumping up from the cellar through a hose pipe—previous to which addition an equal amount of vinegar is withdrawn for market. This small proportion of cider, being added to the larger quantity of vinegar, is changed to perfect vinegar in less than a week. If the vinegar in the casks were in small quantity, the addition of a larger portion of cider would destroy it, and the whole process would prove a failure. By these weekly additions, about a hundred and twenty gallons are made from each cask annually before the arrival of cold weather. All the cider made on the place is thus converted into vinegar, the owner being unwilling to contribute to the manufacture of intoxicating drink.

GRAPE GROWING, CANADA.—Mr. H. Stripp, of the township of Raleigh, County of Kent, has been preparing a piece of land for the purpose of planting a Vineyard. He is fully convinced of the great opening for profit in that branch of industry that is not sufficiently known in Canada. He intends planting 27 acres in the Spring. Mr. Charles Hunt of the City Mills has 300 bearing vines, he is also convinced that we can raise grapes here with profit.—*Canada Farmer.*

PEACHES IN FLORIDA.—In the northern portion of Florida, peaches, and its kindred fruit, nectarines, apricots and almonds, are more at home than in any other State in the Union. Early peaches, which comprise nearly all their trees, ripen in June; in August and September, all gone.—*Country Gentleman.*

APPLES IN NEW YORK MARKETS.—The favorite varieties of Fall Apples are the York, Twenty-ounce, and Fall Pippins and Pound Sweets, the York Pippin being, if any one, preferred but all of them excellent for dessert. Of these varieties the greater part comes to this city from the central and western portions of the State, although considerable quantities are gathered in the lower counties and New Jersey contributes a share. None come from Pennsylvania nor from the Eastern States. Indeed buyers are now here for the purpose of procuring them for Massachusetts, and one sale on Saturday of a thousand barrels is reported. Philadelphia, Baltimore, and the South generally depend for their supply, not only of early but also of Winter Apples, upon the Empire State. The amount of Fall Apples sold and to be sold here this year is estimated by well informed dealers to be between 60,000 and 80,000; and the quotations for the choice varieties mentioned range from $4 to $5 per barrel, according to the size and condition of the fruit. Sales of large quantities have been made at $4 to Eastern buyers.—*New York Daily.*

ROOT GRAFTING APPLES.—Last year, the Southern Illinois Horticultural Society made the discovery that root-grafted Apple trees were of no value, as they began to give out at an early day, while the old seedlings that had been top-grafted stood vigorous and productive. As far back as 1860, the *Tribune* had explained the cause of this failure, both at Cobden and Alton, and at that time attributed it to the ravages of the "wooly apple-root plant louse,"—*pimphigus pyri* of Fitch. The first work of the newly appointed State Entomologist, B. D. Walsh, was the investigation of the cause of the premature failure of the newly planted orchards at and near Cobden; and he attributed it to the same cause previously stated. This, of course, upsets the astute theory of that learned society. In the meantime they have done practical fruit-growing an injury for the time being, as they sent forth a theory that had no real foundation in fact, and to-day the orchardists of that region are at the expense of looking up seedling trees, shipping them long distances, when these same trees will fall as easy a prey to the root plant louse as did the root grafted trees. The old orchards are too far advanced to be seriously injured by them, and it is the young trees that suffer; hence the immunity of the old top-grafted trees from early decay.—*Chicago Tribune.*

GILPIN APPLE.—The Alton (Ill.) Horticultural Society, balloting on the question, "what Apple is the most profitable for a term of fifteen years," chose the "Gilpin" first and the "Wine Sap" next.

DOUBLE GLAZING.—Mr. W. C. Strong finds double glazing a green-house saves coal enough to pay for the extra glass in one year.

APPLES IN NORTH CAROLINA.—The *Asheville News* has received Golden Pippins of Mr. Neill, each weighed *one pound and four ounces;* circumference *thirteen and a half inches.*

FRUITS AND FRUIT TREES ON THE PACIFIC SLOPE are raised with a facility unknown in the Eastern States. This season there is a plethora of all kinds. North of San Francisco Bay, Apples, Pears, Cherries, Damsons, and the smaller summer fruits, are exceedingly abundant and well flavored. In Central and Southern California, Grapes, Peaches, Figs, Pomegranates, and Olives grow with a profusion which would astound a Yankee. The Grape has a flavor superior to those of the Mississippi Valley. This abundance of fruit does much towards making California a desirable home.

THE YELLOW ABERDEEN TURNIP has been found one of the most profitable varieties for field cultivation, being more solid and substantial, and containing more nutriment than most of the flat Turnip family. W. A. Underhill, of Croton Point, N. Y., who has had much experience and success with root crops generally, has raised his own seed of the Aberdeen for the past fifteen years, continually selecting the best and most compact specimens for this purpose. He informs us that during this period he has improved the variety so much, that they weigh five pounds more to the bushel than at the commencement of his experiments.—*Country Gentleman.*

BERBERRY ROOTS AS A DYE.—The farmers of Durham, New Hampshire, and other places in that vicinity, find good employment just now with their teams in drawing out the roots of the common Berberry. They are washed and dried, and used as a coloring material. It produces a bright, durable yellow, and is in great demand.

TRAINING TREES ON ROCKS.—At Broughty Ferry, in Forfarshire, fruit trees trained against the rocks give earlier fruit than trees against walls; and in the neighborhood of Forfar a nurseryman, many years ago, had his trees trained down upon stones laid on the side of an abrupt dell.

VALUE OF WALNUT TIMBER.—A gentleman residing near Huntsville, Ohio, sold from his farm, a few days ago, a single-curled Black Walnut tree to a Boston dealer for $500. The tree was not a very large one. The purchaser, after the tree had been felled, and its true value ascertained, remarked that he would not take $2,000 for it.

GRAPES AT HAMMONDSPORT, N. Y.—At the fair last October there were 95 entries of Grapes or exhibition and competition—one from New Jersey, three from Ohio, the others from this State. There were 12 entries of Apples, 8 of Pears, 7 of Peaches. The entries of the Catawba Grape for saccharometer tests were 12, the average registry was 82, the highest 88; Isabella, entries 5, average 65, highest 73; Diana, 6 entries, average 81, highest 84; Delaware, 5 entries, average 93, highest 103; Concord, 2 entries, average 73, highest 75; Clinton, 2 entries, average 93, highest 94; Alvey, 2 entries, average 88, highest 89; Ives' Seedling, 2 entries, average 77, highest 80; Adirondac, 1 entry, 70; Israella, 1 entry, 74; Norton's Virginia, 2 entries, average 89, highest, (from Cincinnati,) 90; Iona, 4 entries, average 89, highest 92; Kenka, 1 entry, 78. —*Country Gent.*

CURRANTS IN THE NEW YORK MARKET.—The prices realized by the sale of Currants this year have surprised even the dealers. The first arrivals were about July 1st, but being quite green, did not sell very well, yet they brought eight cents per pound. In a few days ripe ones sold for ten cents, but as the quantity increased prices fell to eight cents, and at that price they sold rapidly.

Cherry Currants have sold from 15 to 20 cents per pound, as per quality and style of packages. The demand for this fruit is increasing every year.—*Rural N. Y.*

DESTROYING THE GRAPE VINE HOPPER.—The *Canada Farmer* says: "To destroy the Tree-hopper we should recommend fumigating with tobacco in the following manner:—take an old wire basket, and put it in some red-hot coals, on these strew some common tobacco, cut up tolerably fine; then blow the coals with a bellows till the tobacco is well lighted; early in the morning, when the plants are covered with dew, will be found to be the best time for performing the operation. It should be repeated from time to time, till the insect is exterminated."

Vegetables in Indianapolis.—We notice the following compliment to a "constant reader" of the *Monthly*, in an exchange:

"*The Premium Vegetables.* — Mr. B. M. Bacon has laid before us samples of the several vegetables on which he took the premium at the county fair. They are very fine, and cannot be beaten in the State. Mr. Bacon has always the best of everything, and his enterprise will be a substantial benefit to Tippecanoe county. We noticed, some weeks ago, that the Bacon Seedling Raspberry bore till frost. Mr. B. showed us yesterday some branches from a bush which was *still bearing.* Raspberries in October are somewhat of a rarity, and when to this is added the fact that the fruit is of unusually fine flavor, the full importance of cultivating this variety is manifest."—*Courier, Ind.*

Pea Weevils.—A still more certain agent than that stated in the *Gardener's Monthly* to destroy the Pea-bug in the Pea, before it has attained such a state of development as to enable him to do much mischief to the seed, is to use the ordinary coal oil instead of the oil of turpentine. This substance, called kerosene in the North, is very destructive to all kinds of insect life, and its vapor alone, in a close vessel filled with the Peas, would be enough to destroy the animal germs without, probably, injuring the vitality of the Peas.—*Farmers Home Journal.*

Premium Winter Pears in England.—At the meeting of the Royal Horticultural Society, Dec. 3d, Glout, Morceau, Triomphe de Malines, Triomphe de Jodoigne, Broom Park, Forelle, and Easter Beurre, were the premium Pears.

Tassel Chrysanthemums. — Our readers recollect the *Chrysanthemum Japonicum* with tassel like flowers, introduced from England by Mr. Peter Henderson. Mr. Salter of England has raised a number of remarkable varieties of the same style.

Peas.—The English are as much bothered with contradictory results of Pea experiments as we are with Tomatoes, and their papers are full of accounts and trials. *Ne plus ultra*, a late Pea is much praised generally, but experience shows English experience with a Pea is often reversed in our climate.

Agriculture and Fruit in Brazil.—This lower land in the Province of Para, Brazil, is about like the best hammock land in Alabama. The timber is tall but not large. The palm and shrubbery undergrowth is quite thick. Springs are found occasionally at the head of the gorges of the mountains or table lands, which are level on top, and the richest land I have ever seen. The plateau, at the foot of which we now are, is three or four miles wide, running south ; but east and west it is extensive. Mr. Simpson planted less than three acres in corn in January last, by digging a little hole with a hoe, worked it once, and gathered not less than three hundred bushels. It generally grows four stalks in a hill, all in a clump, three and a half to four feet apart.

Bananas, pineapples, oranges, and some other fruits are now in use, growing in the dry (present) season. The natural growth on the table lands varies in size from the switch to the largest trees ; one of which I measured was twenty-two and a half feet in circumference. It bears the butternut. The large timber is scattering. — *Daily Papers.*

Prairie Dogs.—All along the route of Pacific Rail Road—in fact, all over the plains—are found the holes of the prairie dogs, or Western woodchuck. Small animals resembling a squirrel, they burrow and live in the ground, eating grass. At the end of these burrow, which are sometimes of an extraordinary length, are found immense loads of buffalo grass. These burrows are sometimes found alone, and again villages of burrows are found, each hole occupied by one of these little animals, who as one approaches, wag their tails violently, and, barking a sort of chirping note, they dodge out of sight.

Nine miles from Fort Kearney, on the Denver route, is a village of these burrows, called Dog Town. The burrows here are seven miles in length, and vary at distances of from twenty to thirty feet apart. Sometimes in the same hole is found a little owl, which builds its nest near the entrance, or else selects a deserted burrow, and sitting on a mound or hillock of dirt, on the approach of danger drops into the burrow, leaving nothing but its head above ground, and chirping violently.—*Daily Paper.*

Fruit in New Mexico.—The *Vermont Farmer* says : Peaches pears, apricots, melons, pomegranates, ect., are grown in profusion in the Rio Grand valley, while the culture of the grape

in the same localities is carried on by hundreds. This delicious fruit reaches almost perfection. The soil where it is grown is rich, light and porous ; the rain seldom falls while the plant is flowering or the fruit is coming to maturity, and in winter the frost is just severe enough to kill the insects without injuring the plant. As a consequence of these conditions, the ripe fruit is thin-skinned and without the musty taste so common to many of the American grapes. The grape crop the past autumn was probably larger than ever before, and the fruit of a most excellent quality. There is now, also, in process of manufacture, more wine than during any previous year. The trade in grapes and wine with the eastern States, when a railway is completed, will necessarily be very large.

Pears—Root Propagation.—In a late number of the *Magazine of Horticulture*, Dr. Van Mons, of Belgium, says:

"I now propagate for myself and intimate friends the most choice varieties of Pears, which I obtain by means of the roots. Not a single one fails in this new process. Such roots should be selected as have one or more terminal fibres, and those that are often cut off and left in the earth when a tree is transplanted, succeed well. They cannot be too small, but should not be larger than the finger. The wounds at the large ends should be covered with the same composition to protect, as in grafting. They must be set obliquely."

FOREIGN INTELLIGENCE.

Horticulture in France. — Horticulture has always been popular in France, the sale of flowers and plants being the subject of a widely extended trade. The flower pavilion of the Central Hall or market, recently erected in Paris, presents a most imposing appearance. It is singularly light and airy, covered by an immense zinc roof, supported by iron columns. The upper part of the arcades and small skylights of the roof are closed by rough glass shutters. The stalls arranged on either side of its central avenue in tiers, are four yards square. In the other flower markets, five in number, the flower sellers and their wares are only protected by light moveable structures. Romance has done much with the flower girls of Paris, making them the heroes of endless adventures ; they haunt every place of public resort, obtaining their supplies from these markets, and their aggregate daily sales must be enormous.

The trade in fruit is very active at the present time, not merely with England but with Sweden, Norway, and Russia. The French pride themselves in producing Apples and Pears of enormous size, and, as a rule, these generally prove the best. The external trade in Pears, Prunes, and Cherries has changed its direction ; a large and active commerce is carried on in these articles with England, Sweden, Norway, and even Russia.

Propagating Pelargoniums.—Mr. Stewart of Muncham Park, takes an old hot bed, covers the surface with sand, and says in *Cottage Gardener:* "As I have already stated, I never begin propagating till the last week in August. I commence first with the most tender varieties, such as Golden Chain, Golden Fleece, Mountain of Light, Honeycomb, and, indeed, all the slow-growing sorts, then follow with the more robust. One lad in inserting them (the cuttings) takes hold of the cutting about two inches from its base, and pushes it down with his finger and thumb, leaving a small hole where the finger and thumb have been. When one light of the frame has been filled, he takes a watering pot with a wide-holed rose, and gives the bed a thorough soaking, and puts the sash on at once. Should the weather prove dull no shading will be required ; but if, on the contrary, it is very bright, a slight shading will be very beneficial. On no account, however, give air at any time, until the cuttings begin to grow, when it may be admitted very gradually, and at the expiration of three or four weeks they will be well rooted."

W. H. Harvey, M. D., F. R. S., Died May 15, 1866.—(*Continued from Page* 64.)—Then followed the "Seaside Book," which treated of "the sea and its treasures" generally, and is acknowledged to be "a model" of its kind. And in 1849, having received an invitation from two public institutions in America, he visited the United States, gave lectures, classified botanical collections, and explored the coasts from Canada down to Florida and the Keys. And thence, after a nine-months absence, he returned to Dublin, laden with new specimens and information; the fruits of which were the noble three volumes of his "Nereis Boreali-Americana"—*i. e.*, an Account of the Seaweeds of North America. This work was prefaced by an Introduction, of which the Americans soon discovered the merit. The illustrated book was a quarto, and not very portable therefore, so they reprinted the Introduction separately as a pamphlet, and of it 20,000 copies were sold! It contains, indeed, a fine philosophy, beside invaluable general information on the specific subject of Seaweeds; and, like all his original compositions, breathes throughout the reverent and religious spirit, which was one of the strongest features of his character.

It is a weary work telling, and we fear reading, *of* books; but without naming them no just idea could be given of Dr. Harvey's scientific labors. Before the issue of the three quarto volumes of American Seaweeds was completed, he was actually on the seas once more—this time to Australasia. The University of Dublin appreciated his ardent wish to make further researches, both for supplying the museum and extending the knowledge of the subject, and in 1853 he started for Ceylon in pursuit of more "Sea Treasures" of all sorts.

It was a serious undertaking alone, as any one who has laid out only a basketful of Seaweeds, picked up in a mornings stroll, will know. Think of the trouble involved even in that trifling business, although jugs of sea and fresh water, dishes, papers, muslins, &c., come to order when servants are in attendance; and then imagine what it must have been to lay out no less than 20,000 specimens without an assistant!—the manual labor often including fetching water in pails from a distance, and that after walking half a day perhaps in search of specimens, and having to finish it by the tedious process of laying them out. He often worked at that time from six or seven in the morning to ten or eleven at night. His own account of his outfit for this singular expedition was very amusing; one of his contrivances having been a set of wooden pails, fitting into each other so as to take up as little room as possible on board a ship, but which unpacked afterwards into separate vessels, for the numberless necessities of fetching and carrying. But the playful wit with which he gave these details in after years cannot be put on paper. He had a droll story, however, about his appearance when in full work. He was coming up from the shore one day in Van Diemen's Land (Tasmania), laden with Seaweeds as usual, in dust-colored sea clothes, and with an enormous broad leaved soft white hat on his head, when, as he was passing a low garden fence, within which were two children at play, one of them looked up, caught sight of his uncouth figure, and shouted to the other whose back was turned, "Oh, do come and look at a very ugly old man!" He described himself as much amused on the occasion, for at that time he considered himself quite young (forty-four).

Does the reader wonder how such lumbering articles as were necessary in such an expedition—a microscope and scientific apparatus included—were conveyed along those wild foreign coasts for so many hundreds of miles? The answer is, by sea almost always; he availing himself, as occasion served, of any boat or vessel passing the way he wanted to go: and in this rude and personally laborious fashion—for there was downright hard work to be done in the moving—he explored the shore round Australia from east to west, as well as that of Tasmania and New Zealand partially, not to speak of the off-lying islands, and on one of which, Rottnest, south-west of Australia, a very good algological ground, he spent several weeks.

After exploring Australia and Tasmania (1853-4), Dr. Harvey embarked in a missionary vessel, bound *via.* New Zealand for the Fiji and other South Pacific islands. This cruise was one of his pleasantest recollections. On returning from it he sailed for Valaparaiso, where, alas, more illness overtook and disabled him; but in 1856 he accomplished the home voyage, crossing the Isthmus of Panama, and so completing his circuit of the world, after a three-years absence.

A "Phycologia Australica" in five large volumes, corresponding with the "Phycologia Britannica," was the result of this tour—the sixty colored plates of each volume drawn by Dr. Harvey's own hand. But constant desk labor, and the great quantity of lecturing which devolved upon him after his election to the botanical chair, were undermining a constitution never robust, though his tall frame and great activity might have led people to think otherwise. Nevertheless, the last great work he had undertaken (and that only a year after the commencement of the "Phycologia Australica," so that the two were going on together), the "Cape Flora," was carried on with as devoted a zeal as anything he had ever attempted, and to as good purpose. "Dr. Harvey's death is an irreparable loss to the colony as well as to the science," writes a colonial friend afterwards; and the learned botanist who was joined with Harvey in the work; (Dr. Sonder, of Hamburg), will be the first to endorse the opinion.

But there is yet another word to be said. In spite of all this pressure on his time, and even health, there was one thing Dr. Harvey always found opportunity for—courtesy to ignorant correspondents. We put it strongly, but the words are not by any means too strong for facts. There was no limit to the appeals made to him for the names of Seaweeds, and the explanation of statements in his books, &c. People sent him the commonest plants for scarce ones, and even Zoophytes for Seaweeds, and then complained that he had not figured them properly, in page so-and-so; or else grumbled that he called a plant "rare," when they had found it by scores—the *it*, on investigation, turning out to be something quite different. It may be even (for conscience awakens to a sad keenness after "it is too late to mend,") that near and dear friends worried him occasionally by too frequent applications for help, which, however readily given, added one more weight to the over-weight of his work. But whether the appeals were justified or not by private friendship or community of interest, or were in themselves wise or foolish, the day never came when Dr. Harvey "answered a fool after his folly."

Without great advantages or high birth, he stands unrivaled as a master in one particular branch of study: and this is much to say of any man, yet not too much even of the contemporary of Agardh, between himself and whom no rivalry but only community of pursuits existed. Such of our young readers as may hereafter wander on English or foreign shores, and toss over the "wrack" at their feet, will do well to think of this, and remember that in the works of God there is nothing "common or unclean"—nothing unworthy labor and attention—nothing which when studied well, will be found to have been studied to no purpose.

The day of his death he was read to for the last time—the 103 Paslm, the Lords Prayer, and the Sixth Collect after Trinity. Not that it was the Collect of the season, but he wished for it. And could a more fitting prayer for the dying naturalist have been found? "He died to-day in the greatest peace both of mind and body," was the record of May 15. May it be equally true of us all at the appointed time! By his own request his mortal remains were buried at Torqua. He himself walks "besides the waters of comfort. . . . ."

May this record, slight as it is, of the individual man, have some interest for those who shall meet hereafter, in the fields of literature, the name of Harvey the naturalist.—MRS. *A.* GATTY, *in Cottage Gardener.*

HORTICULTURAL NOTICES.

FRUIT GROWERS' SOCIETY OF PENNSYLVANIA.

The annual meeting on the 17th, though not as fully attended as on some former occasions, had yet more than an average present. In interest it was fully up to the standard. The secretary, Mr. Engle, has faithfully served the Society the past year, and will no doubt have a full report in the regular proceedings for the members. We can only give a very brief abstract of the results of the discussions, as they seem to strike us, as the preponderance of ideas prevailed, although perhaps not strictly in accordance with the views of some members, yet as impartially as we can.

Strawberries had been already discussed on our arrival. Napoleon III, was praised by Mr. Heiges, of York, as a good late foreign sort. In discussing other sorts it became clear from the conflicting experiences of different growers, that foreign sorts like Jucunda, Triomphe de Gand, Trollope's Victoria, Vicomtesse Hericart were excellently adapted to heavy soils and hill culture—while on light soils they were little worth

—on the other hand, the American kinds like Agriculturist, Lady Finger, Albany Seedling were best for bed culture and light soils, and the foreign kinds no good. This alone is a very important fact which could not have been arrived at probably in any other way than through such meetings as these, and shows how useful they are to the cause of fruit culture. In discussing new varieties of strawberries many were talked of—but though many were spoken of as "promising" none were very unanimously praised. In this line we thought Pennsylvania has gained nothing since last years meeting.

Keeping orchards in grass after the trees have got very well established, was discussed by many members. Mr. Marselis ably advocated the clean surface system; all the rest on the other side.

Whether root grafted apple trees were any worse than budded ones? was discussed by several members. The only objection we heard was that they were a little more liable to blow over when young than budded seedlings. In every respect they were believed to be quite as good; while their much lower cost was thought to be largely in their favor.

Does pruning, either in winter or summer, weaken vitality? was warmly discussed. Mr. Meehan contending that was the invariable result; but that it was good practice notwithstanding to weaken vitality when we had more profitable objects to gain. Mr. W. Saunders advocated the same views within some limitations—the other gentlemen argued against it.

About Blackberries, Wilson's Early had been found remarkably productive, and profitably early in the light soils near Philadelphia. In dry heavy soils no one reported from. A few berries of Dorchester had been gathered as early as Wilson; but scores could be gathered early on the Wilson to one of the Dorchester. The Dorchester was best suited to low rich soils. The Lawton did better than Dorchester in high and dry places. Members had not tried Kittatinny much, but the few who spoke of it believed it would be a good thing.

In Raspberries, Doolittle's Black cap was yet the earliest of the well known kinds. Philadelphia came a week after, and every body likes it. The Clarke was an excellent flavor, not remarkably productive, and although believed to be descended from the foreign race, had so far proved free from Raspberry mildew, and consequently entirely hardy.

About Currants, Versailles and Cherry were discussed, their great difference pointed out, and the former praised as a decided acquisition. No other new variety was better than the Red Dutch. Bertin's Early Mr. Andrews thought earlier than Red Dutch, and quite as good. Victoria also had some praise.

The Grape, as it always does, started an animated discussion. The conclusion arrived at was that though isolated cases—few and far between—of new kinds doing well in Pennsylvania were named, only the Concord, Clinton, and Hartford Prolific could be recommended as generally reliable for cultivation in the State. The Telegraph was highly commended, and it was believed would take rank with the other three. Amongst the most interesting remarks were from Mr. Heiges, of York. This place was once celebrated as a grape locality. They could even grow the foreign varieties as well as the natives. Soil, climate, treatment, nothing had changed; but the choicer grapes did not do well now. All the kinds from Iona upwards, to the number of 33 varieties he had known extensively planted about York; but the only *fruit* that could be found in market were Clinton, Concord and Hartford Prolific. The former, though very old, has only recently become a favorite, as it had been pruned too much.

Mr. Garber, the well known grape amateur, also gave an interesting account of his experience with many new ones. He had experimented with nearly all the new ones as they had appeared. The Concord was still, on the whole, the best. After sixteen years it was now as good as ever. It was best to have the roots very dry; near water it did not do as well. Christine or Telegraph was the best early. Martha probably the best white grape.

The most interesting part of the meeting was the reading of the correspondence of the chairman of the fruit committee, which occupied several hours, and on which members made remarks as the reading proceeded. This was very informal, and cannot well be reported—but was a part of the great interest which those who attended derived for their travelling expenses.

The past year has been a prosperous one for the Society under the able management of D. W. Gross, Esq., President, and Hiram Engle, Secretary. For the next session Rev. James Colder, is elected President, and Mr. J. Heiges, of York, Secretary.

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HINTS FOR APRIL.

FLOWER GARDEN AND PLEASURE GROUND.

Last month we gave our good friends, the ladies, some few hints about seed planting. Now some care will be necessary in the rearing of the young progeny; and they must take care not to do as nature does, for in truth they will find that the usual advice of writers to follow nature in their gardening operations is nothing but a phantom, which vanishes with the daybreak of a little experience. Nature sows millions of seeds for every one she is able to raise. Our lady readers ought to raise every seed, and if our help can avail, they shall. In the first place, thinning is very important. In a patch of seeds perhaps fifty may come up; as soon as the seed leaf is well formed thin out to one-half; as soon as the plants have several leaves, thin out one-half of these. In the case of very strong growing plants like Zinnias or Amaranthus, half-a-dozen plants is enough to leave. A thick mass seems to give much bloom. It does produce earlier flowers; but the plants soon die. When they have room to grow with vigor, most annuals will keep in bloom many months. Sometimes it helps very strong annuals to pinch out their tops. It makes them bushy.

O course planting trees and shrubs is the great April work. The great art of successful planting is not to let the roots dry. More trees die from this cause than most people think. Sometimes a tree is dug up with its roots badly injured; but if the few it has left are carefully kept from drying, it should not die from that cause. It may make but a feeble growth, but it should not die outright. A willow branch stuck in will grow without any roots at all; but if it once gets a little dry, there is no skill in the art to save it.

Next to keeping roots from drying, is the necessity of pressing the soil firmly in transplanting. Before much soil is filled in the hole over the roots, it should be pounded firm with a rammer, and thus continued as the hole is being filled. Planting should be early done, when the soil will powder by a light blow. When it sticks instead of powders, it is not good. Thousands of trees are lost by heeling in, as it is called. That is, the roots are covered loosely with earth until a convenient time comes to plant. The soil is seldom pressed in closely about the roots—unless they touch the soil closely they can absorb no moisture—and as evaporation goes on from the tops, the juices dry out, and the roots draw none in. There is an immense loss annually in evergreens, particularly from this cause. Very small things may be covered entirely by the earth. If, however, the soil be warm and wet, they will soon rot if they stay covered too long.

It is often necessary to prune off large branches of trees at this season, and it is provoking to see how unworkmanlike this is too often done.

The following represents the usual appearance of a cut off branch, caused by cutting on one side, and the weight of the branch drawing over and splitting down the bark. A good workman cuts a little on one side first. When it falls over it

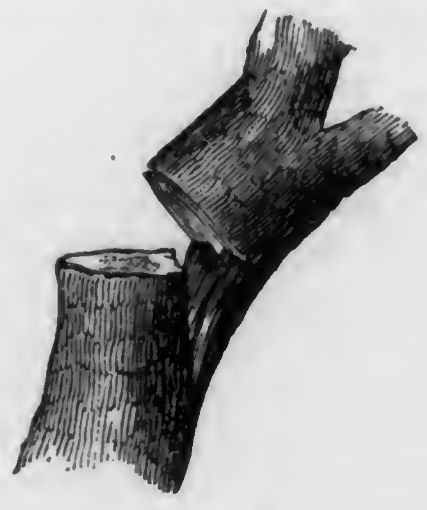

FIG. 1.

then comes off with a clear smooth surface.

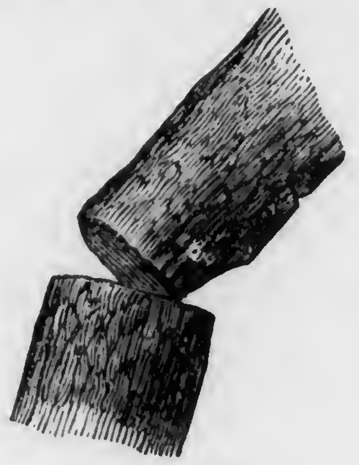

FIG. 2.

After large branches are cut off, the wood should be painted or tarred to keep the wounds from decaying until the bark grows over. Very small branches do not need this, as they cover themselves long before decay seriously commences.

In a general way we can only say, prepare ground for planting. Soil loosened two feet deep dries out less in summer than soil one foot deep. Rich soil grows a tree larger in one year than a poor soil will in three. Under-drained soil is cooler in summer than soil not under-drained. The feeding roots of trees come near the surface: therefore, plant no deeper than necessary to keep the tree in the soil. If there be danger of its blowing over, stake it, but don't plant deep. One stake set at an angle is as good as two set perpendicular. Straw or mat set around the tree keeps the bark from rubbing. Large stones placed around a transplanted tree are often better than a stake. They keep the soil moist, admit the air, and encourage surface roots. Shorten the shoots at transplanting. This induces growth, and growth produces roots; and with new roots your tree is safe for another season. Unpruned trees produce leaves, but little growth, and less new roots.

VEGETABLE GARDEN.

Few things mark a well-kept garden better than an abundance of all kinds of herbs. Now is the time to make the beds. Sage, Thyme and Lavender grow from slips, which may be set in now precisely as if an edging of box were to be made of them. They grow very easily. Basil and SweetMarjoram must be sown in a rich warm border.

South of Philadelphia, the more tender kinds of garden vegetables may now be sown—beans, corn, cucumbers, squashes, etc.—that it is not prudent to plant in this latitude before the first of May; and tomato, egg-plants, etc., may also be set out in those favored places. Cucumbers, squashes, and such vegetables can be got forward as well as tomatoes, egg-plants, etc., by being sown in a frame or hotbed, and potted off into three inch pots. They will be nice plants by the first week in May. Rotten wood suits cucumbers and the squash tribe exceedingly well as a manure. Tomatoes and egg-plants that are desired very early are best potted, soon after they come up, into small pots. They can then be turned out into the open air without any check to their roots. Of course, they should be gradually enured to the open air—not suddenly transferred from a warm and moist air to a very dry one.

Early York Cabbage for early use should be set out early in this month. It is an excellent plan to make the holes with a dibble first, where the cabbage is to be set; then fill up the holes with manure water; and after the water has soaked away, set in the plants. It is rather more laborious than the old way; but the cabbage grows so fast afterwards that it pays pretty well.

It is not a good plan to cut all the asparagus as soon as they appear. A few sprouts should always be left to grow from each, to strengthen the plants.

Celery, with most families, is an important crop, and should be sown about this period. A very rich moist spot, that will be shaded from the mid-day April sun, should be chosen; or a box in a frame by those who have the convenience.

Salsafy and Scorzonera like a damp rich soil.

Bean poles may be planted preparatory to sowing the Lima bean in May. Where bean poles are scarce, two or three hoop-poles, set into the ground one foot from each other, and tied together at the top, make as good a pole, and perhaps better.

Dwarf beans should have very warm and deep soil—sow them only two inches apart. The Valentine is yet the best early, take it all in all.

Peas should be sown every two weeks for a succession—do not make the soil very rich for them.

Lettuce, for a second crop of salad, should be sown about the end of the month. The Drumhead cabbage is usually sown for a summer crop; but the old kinds of Cos lettuce would, no doubt, be found very valuable in rich soils.

FRUIT GARDEN.

Strawberry beds are very frequently made at this season, and though they will not bear fruit the same year, are much more certain to grow, and will produce a much better crop next year than when left till next August. Though it is a very common recommendation, we do not value a highly manured soil. It should be well trenched or subsoiled; this we consider of great value. In rich soils there is too much danger of having more leaves than fruit.

Grafting can be continued till the buds of the trees are nearly pushed into leaf. Sometimes, from a pressure of other work, some valuable scions have been left on hand too late to work. It may be interesting to know, that if such scions are put into the ground much the same as if they were cuttings, they will keep good for six weeks or two months, by which time the bark will run freely, when the scions may be treated as buds, and will succeed just as well as buds taken from young summer shoots.

Buds that were inoculated last fall should not be forgotten, but as soon as vegetation has pushed forth, the buds should be examined, and all other issues from the old stock taken away. It may also be necessary to make a tie, in order to get the young shoot of the bud to go in the way from which you would not hereafter have it depart.

Above all, do not allow the month to pass without posting yourself afresh on the various methods recommended for destroying insects, or preventing their attacks. The advantage of a stitch in time is never more decided than in the great struggle with fruit destroying insects. A mass of information on these points lies scattered through our past volumes, that will repay a careful reperusal for the purpose alone of refurnishing ones ideas in that line.

GREENHOUSE PLANTS.

To turn all the plants out in "the first week in May," without reference to any contingency, should not be done. All plants should be early inured to the open air—the ventilators and sashes should be kept open as much as possible, yet by degrees. Sudden changes of temperature engenders mildew, and a species of consumption fatal to many plants. The hardiest things should be placed out first, in a somewhat shaded spot, and if possible on a bottom of coal ashes, to keep out worms—Azaleas and Rhododendrons, Daphnes and Camellias may go out when their growth is finished; no spot will be too shaded, provided they can get an abundance of air all around. If plants are well rooted, and have not been repotted, they should be so before setting out, as they will, otherwise, suffer at times for want of water. It is objectionable to turn out every thing, leaving the greenhouse for the season like a lumber loft—such as will stay in advantageously should be left; and the idea is becoming prevalent that Cape and hard wooded things are better in than out.

Abutilons, Habrothamnuses, and Cestrums, indeed many similar plants, if taken out of their pots, turned out into the open border, and lifted and repotted early in the fall, will make fine growth and do well. As fast as Hyacinths in pots are done flowering, turn them out into beds. Calceolarias should be kept in the coolest part of the house, and have a good supply of water; as they frequently die after flowering, cuttings of desirable kinds should be taken off now; if they show signs of flowering before fall, do not allow it. Cinerarias should receive the same attention, as they also die out after flowering. As soon as the Chrysanthemums, planted last month, have shot forth, take cuttings for next season's show; they strike very readily in sandy soil, in a somewhat moist and shady situation. Dahlias need not be put out before the second or third week in May; they do not like the scorching heat of summer, and if put out early become stunted and do not flower till later. Pelargoniums should have all the light possible till they begin to open their flower-buds, when they should be somewhat shaded and kept cool, by this the flowers are rendered finer, and last longer. Ever-blooming Roses, grown in pots, should be pruned in a little after their first flowering, kept a little drier for a week or so, then repotted, and placed where desired out of doors; they delight in a rich loamy soil, and are benefited by manure water while growing; those who have not a collection should begin; there is no finer class; six of the best for pot culture may be *Sövenier de la Malmaison*, salmon white; *Devoniensis*, pale lemon; *Hermosa*, rose; *Agrippina*, crimson; *Lyonnais*, pink; and, as a free-blooming white, *Cels*

Justicias, Aphelandras, and Acanthaceous plants which have been the mainspring of beauty in this department most of the winter and spring, and have now done flowering, should have the lightest and driest part of the house, to ripen well their wood, preparatory to being cut back and repotted for next season's flowering. The Achimenes and Gloxinia will be coming on to take their places; they like a moist heat circulating through their roots, and do well with much rough material in the soil.

Pentas carnea, or similar soft-wooded plants grow for flowering early in the fall, may still be repotted if the pots become filled with roots. As the weather becomes warm, shade the house a little to keep the sun from scorching. We like to see all plants under glass have a slight shade in summer time. Water in the morning, keep the syringe going in the evening, keep the temperature betwen 60° and 70°, and all will go well.

COMMUNICATIONS.

THE SELECTION AND IMPROVEMENT OF RURAL HOMES, AND THE PROGRESS OF THE ARTS OF LANDSCAPING AND RURAL ARCHITECTURE.

Read before the Penna. Hort. Society, Nov., 5, 67.

BY J. WILKINSON, LANDSCAPE GARDENER, BALTIMORE, MD.

With the mass, there is less difficulty in selecting a satisfactory rural home than many would suppose, on account of the infinite variety of tastes: what one would condemn will fully meet the wants of another of that degree that they really correct what others reject.

Sites for a country residence of the most desirable character are often overlooked, and those inferior selected and improved by the inexperienced, who are of that numerous class who feel that their sagacity and judgment are equal to any emergency, even in fields of Art, by them as yet unexplored.

This class never call to their aid the experience of the landscape gardener until it is too late. Having expended in the purchase of the site and improvements, even more than it was their purpose originally to expend, and having failed in the main to produce that at which they aimed, and as often in matters of utility and economy as in those of decoration, and being chagrined beyond endurance, in the last extremity, relief at the hands of the landscape gardener is sought. As well might we call the doctor to a patient who is really dead and expect relief, as to expect the artist to restore order, fitness, comfort and luxury out of the chaotic mass of error, when the capital, the vital principle of action is exhausted.

Amongst those possessed of judgment and taste to enable them to select a home for themselves, as I have said, there exists such a variety of tastes, with the general conviction that no one need expect to get just what they desire, almost every condition and variety of a site will find a purchaser; even regions that are malarious and those subject to frequent volcanic convulsions are not exempt, they too have their admirers.

Numerous settlements, and even populous cities are being built where earthquakes are of frequent occurrence, and the writer has now in progress the improvement of a country seat in a liberal style in a region where a large portion of the inhabitants are annually afflicted with chills and fever. It will be my purpose to point out those characteristics most desirable, and such as should be sought by those in pursuit of a home in the country.

The first inquiry should be, how is it, or will it be be acceptable?

The desirableness of a particular means of access to a given site will be governed by the means, taste and habits of the family.

While one would not avail onesself of a horse or steam rail road, perhaps five times in a year, prefering the use of a private carriage, another would, for various reasons, prefer the rail road; hence, to meet the wants of the latter, the rail road would be a great consideration, while to the former it would be objectionable, and is avoided by those who desire to drive to and from the city. Numerous rail roads and reduced rail road fares have induced many of late, who would otherwise have remained in the cities, or the immediate suburbs, to locate their summer, and some their permanent residences, quite remote. On the line of railroads, to the distance of 20, 30, and even 50 miles from the cities, well decorated country seats have recently sprung up, in many instances quadrupling the prices of land in the respective localities, producing a good demand for both common and mechanical labor and

creating a home market and fair prices for many articles hitherto unsaleable.

Many of my patrons have learned too, that vegetables can be purchased for less than the amateur can produce them.

Salubrious climate, and a supply of good water are of the first importance, greatly paramount to the quality of the soil, though this characteristic should by no means be lost sight of. Promixity to churches, schools, good society and a population sufficiently dense to support at least two butchers, a competition in the mechanical branches and merchandizing, are also important.

With the present demoralized state of society, isolated places of abode are not desirable, but really dangerous and unsafe, in consequence of the wanton depredations of vagrants and thieves, who select such secluded and unprotected spots as their favorite fields of operation.

The area or amount of land necessary to supply all the comforts and luxuries attainable, particularly for families of rather limited means, is much less than is generally thought; any more than is necessary to secure quietude, a proper degree of privacy, a proper distance between the respective buildings, a suitable division and distinctness of the pleasure and other grounds, for the maintenance of the dairy and poultry required by the family, and the culture of fruits and vegetables for consumption, is generally unprofitable, and not unfrequently a source of loss and annoyance, more than offsetting all the pleasure to be derived from a home in the country.

A site for a summer residence only, is most desirable on the summit of a hill in order to secure the luxury of the fanning breezes from every point; while for a permanent residence, both the dwelling and stabling should, if practicable, be so located as to be somewhat protected from the most unpleasant winds. Where all the other characteristics, other than protection from the chilling blast, are afforded in a site, the defect can be supplied in a few years by planting a dense belt of evergreens. The introduction, however, of this artificial protection, should be performed by one skilled in the art of landscaping, that the least number of trees sufficient to produce the effect may be used, that the varieties and the form of heads most desirable for the purpose, and such as will best withstand exposed situations may be selected. Plants of different degrees of vigor and rapidity of growth, most varied in tint of foliage, form of head, and low and densely wooded ones, should be selected and so set respectively that each may have a due area for its natural development. If such plantations are selected, set and arranged with skill and taste, they may be made features of great beauty as well as utility in the landscape.

Great care should be taken in the selection of such trees as will produce the *sensible horizon* most broken and picturesque, or the effect will be destroyed, and it will have the appearance of an orchard of trees of one variety and age, monotonous and tame. If the scenery in the direction that it is desirable to introduce such protection is particularly beautiful, openings or vistas may be left at the proper points without detracting materially from its utility.

If it is desirable to secure water views, narrow openings will suffice, leaving the imagination to supply the extent of the surface of the sheet, a portion of which is seen. Very deceptive effects can often be produced on this principle in cutting out vistas in woodland, by carefully avoiding showing the margins of the sheet, or stream exposed to view, and by opening the vistas at such points as shall present partial views of the same stream, or sheet, as remote from each other as possible, by which the stranger is impressed with the idea of a great extent of water surface, while in reality, it is very limited.

Elevated sites on the margins of navigable streams are particularly beautiful and desirable, infinitely more so than those bounded by a water horizon, as in an ocean scene. A more beautiful feature in the landscape is rare, than a water-wheel, to secure which from a favorable point of view, minor features may be sacrificed. Too enlarged views is a common error with those who are inexperienced in the selection of the rural home, hence an "*elephant*" is purchased, which can neither be kept with pleasure, nor disposed of at cost. Many embark in the purchase of a country residence with the erroneous idea, that the means necessary to secure a title of the premises, erect the necessary buildings, and supply the various features of decoration that their limited experience suggests as constituting the acme of perfection, is all that will be required. But ignorance of what will be the cost of what I have enumerated, and no allowance for the perpetual cost of their maintenance, often leads the purchaser to undertake much more than he has the means to accomplish: hence, not unfrequently, conspicuous features of decoration are commenced, and of necessity are indefinitely abandoned, and thus remain, perhaps for years.

This, and other disappointments growing out of the subject at first considered so simple, so chagrins the possessor, that the taste and relish for the country, originally so ardent and insatiable, is changed to an equal degree of dislike and disgust, until, not unfrequently, in a fit of despondency, he is induced to sell at a great sacrifice and return to the city. Having sacrificed much of the *substantial* for what he declares is nothing but a *bubble*, which he seized and exploded, he henceforth becomes the volunteer counsel of every one he hears express a desire to seek a rural retreat, to whom he narrates his experience and presents a picture so gloomy, that he dissuades many who would not only be happy and contented in the possession of a properly selected and improved rural home, but the health and comfort of their families promoted, and that without incurring greater cost of living than was required to live in the city.

This is no imaginary picture, but a truthful history of many who might have avoided this harrassing loss and disappointment and prevented others from being misguided, had they only done as discrete men do in other matters in which they have no experience, viz., taken counsel of those qualified to give that which would be safe and judicious; but a strange hallucination seems to control many, in fact, most of those who are inexperienced and desire to possess themselves of a country residence, that to secure what they re-require is so simple, that none but a novice needs counsel in the selection of a home in the country; while a work from a competent adviser would generally prevent the sad experience I have narrated; to the truth of which there are many who can to their sorrow attest.

In a new, unimproved place in the country, where buildings and all features of improvement and embellishment are to be supplied, it is very important to systematize the mode of procedure, and carefully estimate the cost of the proposed improvements, that it may not exceed the investment proposed. If the dwelling is to be erected on an open glade, where there are no trees, it is generally most satisfactory not to plant any until the building is completed, the roads and walks made, and all the grades established. The first step to be taken in the work of improvement, is to procure plans of the buildings to be erected, which should be carefully studied, and the cost estimated before embarking. It will always prove most satisfactory to those requiring the services of an architect for rural structures, to employ one whose range of his profession embraces both rural architecture and landscape gardening, as he will be likely to produce and preserve a greater degree of harmony and fitness in all features of improvement, than where the respective branches are supplied by different individuals whose tastes are liable to be widely different, incongruous, and wanting in that harmony of the partsso essential to success.

It was this view of the subject, acquired in a protracted experience, that induced the writer to unite in his practice these hitherto distinct professions, and the success and satisfaction to himself and his numerous patrons, fully establish the correctness of the premises taken in the above recommendation.

The economy of obtaining the counsel of an artist possessing the greatest degree of experience, of tried skill and taste to supply the plans of the buildings and grounds, must be apparent to all interested. Many features of the work of improvement of the place belong equally to the house and to the grounds, hence are inseparable, and the execution to be economical and congruous, should be by the same hand. Having determined on the plan of the buildings, which should always be made with particular view to the peculiarities of the site and its surroundings, the site should be carefully engineered; a plot of the grounds made and the grades all established and staked before ground is broken.

The surface soil to be removed, if it possesses, as it usually does, a greater degree of fertility than the sub-soil, should be deposited where it will be out of the way and still convenient of access when it is required as a top-dressing for the new grades produced. If any portion of the grounds to be filled has a fertile surface, this too should be removed and preserved as above described, before the work of grading is commenced.

All soil removed in excavating cellars and foundations should be hauled at once and so deposited as to produce the grades decided on. This will save moving soil twice, and the soil moved will have time to settle by the time the buildings are completed, thus avoiding the expense of regrading, which is always necessary where fills are made of irregular depth, and the grades completed without giving time for the soil to settle.

Drainage and sewerage pipes should also be laid before the buildings are erected, that the filling of the trenches or conduits shall also have time to settle before the final dressing of the surface ground is performed.

As a general rule the cellar should extend under the entire building, and if it is wet so as to require drainage, the trenches for the foundation wall should be below the cellar, and be filled to the level of the cellar floor with finely broken stones. The trenches under the walls should all have a fall to the place of discharge, or where they shall connect with the main drainage conduit. This conduit should be a close pipe, and should always be trapped to prevent the cool air of the cellar from flowing out through the conduit and a corresponding amount of warm air being drawn into the cellar, which will be the effect without the use of the trap.

The surface of the ground should have a gentle slope from the building in every direction, and to as great a distance as is practicable.

It frequently occurs that material to be removed in cellar excavations, is well adapted to the purpose of making roads and walks, which having been previously engineered and staked, can be made simultaneously with the excavations and at less cost than if each branch was performed separately, and a well graded road provided for hauling the material for the building. The carriage gate and the approach to the dwelling are features of great importance in the improvement of a country residence; they are in effect what the frontispiece is to the book.

A liberal space around the gate, and a good width of carriage way, conveys the idea of generosity in the proprietor in all that pertains to his improvements.

Division fences should be avoided as far as practicable, and a hedge as a boundary is, if it is a good one, most satisfactory. The Osage Orange is preferable to any other plant for hedges in this latitude. If the plants are good and are properly planted in a well prepared border, they will, if well managed, form a most efficient fence in six or seven years.

No feature of its cost does so much to furnish a country residence as a well grown and kept hedge, and no variety of fence forms so effectual a protection.

In tree decoration, a large portion of evergreens should be introduced, as they tend greatly to relieve the dreary effects of winter in a rural scene, and when bowing under a mantle of snow, nothing can be more beautiful.

The most profitable stock for the amateur, is a good stock of *insectivorous birds*, hence, their propagation and protection should be objects of special regard and attention.

A well set and well kept *Lawn* is to the grounds what the tapestry is to the parlor.

A proper proportion of well selected and well cultivated *fruits* constitute the most profitable and most satisfactory crops to the amateur. The strawberry and grape should stand high in the collection of an assortment. The fruit yard should be in full view from the living room windows, while the vegetable ground should be secluded; well drained bottom land is generally preferable.

Cherry and standard pear trees, may with propriety be worked into the plantations on the lawn. Much ado is made about *water supply*, but in this latitude no improved place is without the means of an abundant supply of the best and most wholesome water for all useful purposes. The rain that falls on the roof of a dwelling, if carefully preserved in properly constructed spacious *cisterns*, will be found ample to meet the necessary wants of the famliy.

In the writer's experience, the annual average fall of water in this latitude is about 36 inches in depth, or 21 gallons for each superficial foot of surface of a roof measured horizontally. The capacity of a cistern should be sufficient for the the use of the family for 90 days without rain, and the depth of the covering over it should be sufficient to effectually protect it from solar heat. When thus arranged, the temperature of the water will be found to be about the same as ordinary well water, than which it will be purer, softer and more healthful, and no source of supply is generally so economical and certain as that of collecting rain water in well constructed cisterns. The usual depth and capacity of cisterns are not half what they should be, hence their general inefficiency as a source of supply.

The writer is constantly engaged in the improvement of rural residences, yet he has not excavated a well in the last twelve years, while he has constructed seven cisterns in the past six months.

Many other features of interest pertaining to this branch of the subject, of equal, or perhaps greater importance than those already considered, might be added, were it not that other branches equally interesting are to be treated on.

As to the progress of the Art of Landscape Gardening and Rural Architecture, it may be said, that both are of late receiving increased attention, especially in the field of operation of the writer.

Numerous creditable specimens of both may be seen in suburban Baltimore, also in other portions of this and other States, to which the time of the writer has been mainly devoted for the past ten years. Occasionally examples of prodigality in these branches may be seen in gentlemen possessed of large means and a corresponding degree of taste, who cannot resist the seductive influence of these arts; but in the main, the improvement and embellishment of country residences are conducted with a commendable degree of economy, and yet with a growing taste for the beautiful.

Places judiciously improved rarely produce feelings of disappointment or dissatisfaction, on the contrary, they yield what was sought, and afford to their possessor a degree of comfort, health, and pleasure fully commensurate with the expenditure made in procuring them.

Notwithstanding the very rapid growth of the Monumental city since the close of the late unnatural war, the demand for suburban cottage residences, is such, that many are bringing an annual rental equal to 30 per cent. of their cost.

The writer has divided a number of large farms into country seats within the past few years, many of which are being taken up and liberally improved.

The class of buildings generally erected are substantial and imposing, though no order of architecture is strictly adhered to. Stable buildings are receiving special attention, and great improvement in that direction is apparent, for of late stable building has become a stable business. The perfection of the drainage and ventilation in some of our stables, is probably not excelled, if equaled in any part of the world.

The *Ice House* and Refrigerating Chamber combined, as now constructed in this region, is very perfect and efficient.

Conservatories, and *cold* and *heated Graperies* are also becoming a common appendage of respectable country residences. In short, the march of improvement in every branch of the profession of the writer, is such, that employment in it, which but a few years since, was uncertain and the business precarious, has now become as certain, reliable, and remunerative as most other legitimate vocations.

TREATMENT FOR MUSCAT GRAPES.

BY A. LEDERHOFER.

A few words in regard to cultivating the Muscat Grape I believe may be of some use to amateurs and gardeners who have but little experience in cultivating this valuable variety.

After pruning my vines, I make a solution of two parts of clay, one part fresh cow manure, and one part sulphur and soot mixed with a quantity of tobacco water, and paint the vines thoroughly all over. After this I lay the vines down in a half bow. In this state they remain until starting to break.

After watering my vines I give them a good top-dressing, consisting of fresh cow manure, from two to three inches deep, and give them a thorough good watering, about two gallons to every square foot. The water I use warm, from 70 to 80°. Keep up a gentle moisture by syringing two or three times a day. As soon as the shoots break regularly, I tie them up, and give another gentle watering; syringing only in the morning of fair days, yet keep up moisture in the house until they bloom. After they set I resume again the keeping up of moisture, to guard against thrip and red spider.

By the time the berries make their second swelling I give another watering of liquid manure. The last watering I give my vines for the season, but keeping still a continual moisture on all parts of the house until the berries commence to color, I then increase the moisture about them.

In regard to ventilating my houses, I usually admit a little fresh air the first thing in the morning, to prevent the temperature in the house from getting too high during the day time, and increase it during the day as may be necessary. I shut up my vineries pretty early on all sunny days to keep in the heat and save heavy fireing.

The following is the rule of temperature I adopt in keeping up Muscat houses:

	DURING NIGHT.	DAY.	SUN.
To commence with,	45°	50°	60°
After the second week.	50	55	65
When breaking.	55	60	70
When in bloom.	60	70	80
When setting.	65	75	90
After setting.	60	70	80
When coloring.	65	75	90

By observing the above temperature I find

the grapes to ripen as follows exactly five months after starting the vines:

Royal Muscadine.
Chasselas Musque.

After 5½ months.

Frontignan White.
Golden Hamburgh.
Joslin's Saint Alban (?)

By the 6th month.

Bowood Muscat.
Cannon Hall Muscat.
Muscat of Alexandria.
Muscat Hamburgh.
Muscat Rose de La Doree.

By reading several treatises on impregnating, written by Mons. Audin, Professor of the Botanical Gardens, in Paris Jardine des Plants, I got the idea of impregnating my vines, chiefly Cannon Hall Muscat. The way I impregnated them was as follows:

During the noon time, if the vines are in full bloom, I take common bellows and go from bunch to bunch and give them a slight blowing; this I do for two or three successive days. By adopting this method I have always been very successful in getting perfect bunches.

[This is a very interesting paper; few grape growers give sufficient attention to painting the vine stems. Thrip, Red Spider, and other vermin lay eggs under the loose bark, which painting destroys. We suppose grape growers have come to the conclusion that Chasselas Musque and Joslin's St. Albans were identical. We think they are, notwithstanding our friend finds a little difference in his experiment in the time of ripening.—Ed.]

OSAGE ORANGE HEDGE.

BY J. H. CREIGHTON, IRONTON, OHIO.

There is a new way of making hedge fence now recommended freely—started, I think, by some one in Illinois, and published several months ago in the *Gardener's Monthly*, without any note or comment from the editor. My object in writing is to caution inexperienced persons from getting into trouble. It may be remembered that the plan is to let the plant grow up to a considerable height, and then bend them over at right angles with the row, and when thus bent hack then partly off, then some other directions not necessary to mention. Now, whoever tries that business of bending down such plants and hacking them partly off, will find it very much like chastising a bad boy that has been left alone too long.

That a good ugly fence can be made in that way with a great amount of labor, I do not deny; but it will take too much ground and be uncontrolable, and the most expensive of any kind of fence. The great matter is to keep a fence under control. *The first foot* from the ground is of more importance than all the rest. No one need fear for height or width; you will always have more than you want. Don't let the lower buds get their eyes put out with the growth of the upper branches for the first two or three years. One live bud near the ground is worth more than a windrow at the side, or a shoot six foot long at the top. When a good fence is done, a section of it ought to be in the shape of a triangle—equal on the three sides, except when considerable height is wanted, then the ends should not be any greater on that account. Branches two feet long should come out near the ground, and almost lay on the ground. The longest branches at the ground. Nothing seen but points from between them.

[Thanks for our correspondent's caution. We give as *intelligence*, every item of news that is floating around, not deeming it a point of pride to fill our pages with matter "all original." Bound volumes of the *Monthly*, therefore, become a full record and annual of Horticulture, giving the history and origin of every fact. We do not, of course, endorse every thing we give as mere news. In the present instance we heartily second our correspondent's condemnation of "Plashing." Mowing to a triangular shape in June is the best way to get a perfect hedge.—Ed.]

LIQUID GRAFTING WAX.

BY HORTICOLA.

Dr. Warder, in his American Pomology, p. 98, mentions the Liquid Grafting Wax of *L'homme-Lefort*, and says that it is a secret composition, according to *Du Breuil*. *Du Breuil's* assertion dates as far back as '57, and it is *barely possible*, not probable, that the secret was kept, especially as the composition is so very simple. It was, in fact, made known many years ago, so that I obtained and published the recipe in 1862. (See *Horticulturist* of 1862, pp. 115 and 116, and also *Horticulturist* of 1863, p. 123). If Dr. Warder takes the *Illustrated Monthly*, edited by *Drs. Lucas* and *Oberdisck*, he will have met with a number of similar compositions, according to the Program de Congres pomologique de France, held from Sept. 19—29 last at Paris rue Grenelle St. Germain 84—there was exhibited not only the original composition, but also a mastic perfectionne by Leroux Robert of Conches, and a Glu horticole pour greffer a froid.

Mr. *Mead*, the Editor of the *Horticulturist* at that time, told me he had had a correspondence with a person, desirous of preparing and putting it in the market; but as alcohol was too expensive, something else had been substituted that changed it for the worse.

Having tried every composition of the kind, the ingredients of which are known, I am fully prepared for stating that none equals that of *L'homme-Lefort.* I have used it from the time I became acquainted with it to the exclusion of all others, except for experiments. When laid on with a brush, care must be had to brush it on as thin as possible. If too much is used, the surface hardens very quickly and prevents the alcohol to evaporate through the hardened surface. This does no harm, but it is a waste of grafting wax which may be avoided. Persons, not acquainted with the natural sciences, infer from the whitish color the surface assumes when the wax beneath it is soft, that *the wax moulds*, which is, of course, ridiculous. Rosin never moulds, but pulverized rosin, like pulverized glass, looks whitish.

This Liquid Grafting Wax is also used exclusively at the Pomological Institute in *Reuttingen*, the director of which is the celebrated Pomologist *Dr. Lucas*, formerly Professor of Pomology at *Hohenheim.*

It seals up hermetically all wounds of trees made intentionally or unintentionally; it hardens in a few hours protecting the wound perfectly against all atmospheric influences, before it hardens, of course. Even the fervid heats of our summers do not soften it, nor does it crack in our coldest weather. A single application of it will last for a year; but as it makes worsted shreds or lindenbast water-proof, the bandages must be loosened in time, otherwise they will injure the tree. *Carriere* calls it a most admirable preparation. This is strictly true.

The back volumes of the *Horticulturist* referred to, may not be in the possession of some of your readers that may wish to make and use the Liquid Grafting Wax. I therefore subjoin here the recipe, and explain the modus operandi. The ingredients and their proportions are the following:

1 ℔. of Rosin,
1 ounce of Beef Tallow,
1 tablespoonful of spirits of Turpentine.
5 or 6 ounces of Alcohol, (95 per ct.)

Melt the Rosin over a slow fire; when melted, take it off and add the Beef Tallow, stirring it constantly; let it cool down somewhat, mix the Spirits of Turpentine, little by little, with it, and at last the Alcohol in the same way. Should the Alcohol be added while the mass is too hot yet, too much will be lost by rapid evaporation; if, on the contrary, it is too cool, it will form a viscid lump and must be slightly heated again. Stirring briskly is indispensable to mix the ingredients thoroughly.

In well-corked bottles it keeps for years. That which I use now I made four years ago. In case it becomes, in the course of time, too thick, the addition of some Alcohol will make it liquid again. *For this purpose it must always be warmed.* It is a good plan to put the bottle containing it, in boiling or hot water, to accomplish this.

NOTES ON EASTERN TOUR.

BY DR. J. STAYMAN, LEAVENWORTH, KANSAS

No. 2.

After spending some time at Vineland, we visited Cape May, the most fashionable summer resort, but could not find much to interest a horticulturist, except a few private residences, which were costly and built in good taste. We did not admire the architectural design of such massive hotels, built apparently for giants, or to wade the ocean, although the accommodations were good. The roar and swell of the ocean, the dashing and breaking of the waters, soon became monotonous. We gathered a few pebbles and sea shells, and wandered around the suburbs of the place to find some relief from the monotony, but the trees and shrubbery appeared to have past their last summer day, so we returned to Philadelphia once more, liberated from the commotion of the ocean; from the bogs, ponds, pine and scrub oak—from musquitoes and their music; and we felt relieved.

The country from Philadelphia to Carlisle, by way of Lancaster and Harrisburg, is the most beautiful we saw, showing thrift and prosperity, and the farmers, as a class, are independent. The Pear, as a standard, succeeds well, also the Strawberry and Concord Grape. The Peach

only at favored locations, and the apple is rather in a state of decay. We could not fully determine whether the varieties there in cultivation were degenerating, or the mode of culture was the cause, for we saw some fine, healthy, young orchards.

We feel confident that a proper selection of varieties, planted in good locations, and trained and cultivated in a better manner, would be as successful now as formerly, yet the East as a general rule is not highly adapted to the perfection of the Apple, as we have never seen as fine specimens there as West.

The old orchards are pruned up high and planted far apart, so they can grow other crops in the ground and drive under the trees to gather the fruit. This system of culture in a country of no great fertility, soon exhausts the soil of all the elements which sustain the vigor and health of the tree, and they become debilitated, diseased, unproductive, and soon die.

They often plant their young orchards on old orchard ground, which is still a worse practice. This taste for high topped trees and transplanting on old orchard ground, and cropping the land, should be abandoned if they ever expect to succeed. The Pear has shared a better fate, being mostly seedlings, planted in gardens where they received better care and cultivation, and they were fine and healthy and some of very great age and bearing nearly one hundred bushels to the tree.

Carlisle is located between the North and South mountains in Cumberland county, (a rich and fertile valley). It is an old town that has not improved much except the last few years. Dickinson College is located here, having good buildings and a fine "campus." The town is ornamented with shade trees, principally European Linden, and might be called a handsome place, having a beautiful landscape.

Mount Holly Springs, six miles south, is a small manufacturing village. The Messrs. Given, Mullin, Kempton & Co. have four large splendid *paper mills* in full operation, with all the improved machinery, which gives life, animation, and industry to the place. This, of late years, has become a celebrated summer resort for health, comfort, ease and pleasure, where you have soft cold spring water, and where you can breathe the pure fresh mountain air free from musquitoes and gnats, with good *hotels* where you can get *fresh butter* and everything the country affords at living prices.

The scenery is rugged, romantic and picturesque. Mountain Creek divides the mountain and connects the valley with the neighborhood of Ideville, Bendersville and Gettysburg. Here we saw the Pear, Strawberry, Dewberry, Huckleberry, and Wild Grape, in perfection, and at a few favored places the Catawba, but as a general thing it was a failure, but the Concord done well.

Miss Ettie P. Black of this place, a young lady of much taste and refinement, and an amateur florist, had the finest display of Gladiolus we ever saw numbering some 140 varieties. Even Brenchleyensis, Courantic Fulgens, Daphne, Neptune, Nemeses, Othello, Galathe, Emma and Penelope appeared to have gained in beauty. But such perfect and full bloom of clear and delicate colors as Empress Eugenie and Empress Josephine presented we have no ability to describe. Eugene Sue, Paul de Stella, Pierre Dupont, Pierre Notting and Princess Eugene were splendid and of the finest shade of colors. Mad. Trauffaut, Mad. de Vatry, Napoleon III, Ophir, Victor Verdier, Vulcain, Le Poussin, La Quintinie, Maria, Rebecca, Berthe Rabourdin, Solfatere, Mad. Furtado, and Reine Victoria, were all magnificent, with every shade of color, and worthy of cultivation. This gorgeous display of such fine French Gladiolus, of several thousand bloom, from July until frost, were the admiration of all, and added much to the interest of the mountain scenery and the taste of the place and received the commendations of the guests of the Springs, and all who saw them.

We paid a visit to Bendersville; Messrs. Willson and Burckholder have large vineyards. The Catawba had rotted badly, and they did not think it worthy of cultivation at their place. The Concord was full, fine, and healthy. The Clinton, Oporto, Taylor and Dracut Amber were healthy, but the Oporto is too acid except for jelly. The Taylor was not as prolific as the others. We had the pleasure of tasting the Clinton and Catawba wine which were good. The Clinton we believe holds a higher claim for wine than many more popular kinds. The Grape improves very much by hanging on the vine very late. In our country it is one of the latest in ripening and then it is sprightly, juicy, sweet and excellent. These gentlemen have fine heathy young apple orchards, but this season the bloom was injured by excessive rains as elsewhere east. They are enterprising fruit growers and are extending their operations on the eastern and western shore of Maryland, where they think the climate more congenial.

At Ideville we visited Mr. Detrick's vineyard; his Isabella had dropped their leaves, and the fruit did not ripen. The Catawba was in better condition than we saw it anywhere east, but it had suffered considerably, so he had not half a crop. He stated that it had never failed before. His Concords were fine and healthy. He is so well pleased with them that he is going to plant 3000 more in the spring. He plants 6 by 6 and trains on stakes. His Isabella wine was the best we ever tasted of that variety. He has a favored location for the Peach and has not had a failure for 9 years; and is extending his orchards. His location is high and dry, and the soil is a shaley sandy loam, and he fertilizes with lime. He is sanguine of success with both Grapes and Peaches, and his industry and perseverance justly entitles him to such. We visited many other places in the valley but we found nothing different worthy of note, except the Fallowalder Apple done the best. We took the cars at Harrisburg for Pittsburg—this railroad is the best conducted of any we traveled on, and it was not necessary to have a lady, or borrow one, to get a seat in a first class car, and when going over dangerous places the wheels were examined to see if sound.

On the 4th of October, we visited Mr. Knox's fruit farm, in the prime of Grape season. They were busily engaged gathering, packing and shipping about two tons of Grapes per day to the Eastern markets, where he realized about 20 cents for Concord and 30 for Delaware, a pound. He has about 35 acres in vineyard, embracing about 100 varieties, but the principal Grape there was the *Concord*, which brought more money than all the others. Although the Delaware brings one-third more in price it can never be as profitable as the Concord, for it does not produce half as much; we found it there fickle and uncertain, the foliage was very much injured, and the berries did not ripen well. The Catawba, Diana, and Iona, were no better. But the Concord was excellent and had apparently improved by age, and it gave us relief to witness its health, vigor and productiveness, after seeing the fickle varieties. The Martha, a white Grape and seedling of Concord had much of its appearance in health and vigor but not near so large in bunch or berry but of better quality, and is very promising.

The Hartford Prolific still takes the lead as the most healthy, hardy, and productive early Grape. If the Creveling would set its fruit better, and the bunch was more compact, it might come in for some claim on account of its quality, but we fear it will never become popular.

The Ives' stands with the Concord and Hartford for health, vigor, hardiness and productiveness, and if it makes good wine must become very popular, but cannot take the place of Concord for market, being less in size of bunch and berry, but nearly equal in quality. The Taylor was healthy and excellent but small in size. The Alvey was healthy and fine but not very vigorous, rather small in size, if hardy might do for wine. The Herbemont and Elsingburg were too small in size but excellent in quality.

The Clinton as everywhere was healthy, vigorous and productive. It is a great pity that this is not a *new Grape*, that its qualities might be more than a "wild frost grape," and that its wine would not "taste so wild." The Maxatawney was fine, and if more hardy would be valuable. The success of this fruit farm is not so much in the location and soil as in the energy, perseverance and determination of its proprietor. It is seldom we find so much combined in one man as in Mr. Knox. What he takes hold of he does with force and will, and in a thorough manner; he not only overcomes small obstacles but surmounts the greatest difficulties with apparent ease. His fruit farm would swamp a common mind with plenty of means in the fruit season to think of shipping several tons per day of perishable fruit, three and four hundred miles to market, and then compete with others living there.

In Ohio the Apple crop was short, but in some parts the Peach crop was fair. The Catawba Grapes were excellent, better than they have been for many years, and the wine made this season will be long remembered for its great body, good quality, and fine aroma.

On the 10th of October we attended the St. Louis fair. The display of machinery was beyond description. Every department was well represented except the fruit, and for what reason we did not learn. There were in attendance upwards of 100,000 persons, and the success was beyond their most sanguine expectations. This society has hit upon a very successful method, which would be worthy of imitation. They charge nothing for entering an article, and it is open to the competition of every State. They lay every inducement to get persons to exhibit, and pay liberal premiums. They make a charge for entering the grounds, which is sufficient to pay the premium and expenses.

The grounds are beautifully and tastefully laid out with drives and walks, ornamented with shade and evergreen trees, and all laid in grass and kept in the best order. It is not only a fair, to see the products of the country, but also a *social pic-nic*, where you see the rich and poor once a year meet together on the same level. At noon you can see the grass covered with every luxury each person desires, either brought along or procured on the grounds. There the *fair sex* are mingled with the multitude, enjoying their repast with pleasure, and if necessary a "*bottle of Pop*," "*Catawba Ale*," "*Tea or Coffee*," is added.

Had the fruit department been as good as the country could have produced, it would have been complete. Agricultural societies must learn that fruit culture is not a secondary consideration, for it requires more time, skill and patience, to raise good fruit, than corn, beef, pork and potatoes. We found Mr. Husmann with excellent samples of wine, which took the first premium. The California "Angelica" and Speer's "Oporto" were there, neither of which were admired. Mr. Jordan was there with Concord Grapes, which made a good show, and took the first prize.

At Herman the Grapes have been unusually good, and the must has shown great weight; even the Delaware done well, and in some places the Catawba, but Concord and Norton still stand ahead of the list.

In Kansas the Grape has done much better than for several years. The Catawba was good; and Kansas challenges any state with the Concord Grape, the Apple and the Pear. No where have we seen such perfect specimens of the Apple as here and the adjoining counties of Missouri. Even Egypt, the most celebrated Apple region of Illinois, cannot compete with us. Apples so large in size, perfect in form and excellent in quality, we have never seen elsewhere.

RARE EVERGREENS.

BY MR. E. MANNING, HARRISBURG, OHIO.

In looking over the January number of the *Monthly* I was much interested with the communication of Josiah Hoopes, Esq., on well tested Evergreens, but was somewhat surprised to see classed as half hardy the Picea pinsapo. I have had it growing on my grounds for the last seven years, during that time it has been only twice slightly browned, but very slightly injured. There is not, I think, anything in whole Fir tribe more distinct, or beautiful—more so than its first cousin the P. Cephalonica, it is of a lighter green; and, during its growing season, it is particularly charming, holding its color well all winter.

But, says Mr. Hoopes, the glory of this genus is reserved for the newer species, viz: Nordmanianna, P. Cephalonica, P. nobilis, P. grandis, P. pichta; and had he added the P. Parsonsiana and amabilis, it would have added much to the collection, as both are very fine. The latter is lighter in color than the former—of less glaucous hue,—both very distinct. The Picea pindrow and P. Webbiana are both tender here, never having had one specimen pass the first winter without being an eye sore the rest of its days.

The Cupressus Lawsoniana Glauca, or silver tipped variety, is much handsomer than the former, more bright and silvery; it is a new seedling originated on the grounds of the late William Reid of Elizabeth, N. J.

Among the newer varieties of Picea here, the Mugho rotundata is a beautiful new dwarf. The P. Pyrenaica is certainly very splendid, perfectly hardy, with leaves over six inches long, very deep bright green, very fine. The P. Benthamiana is not yet sufficiently tested. P. Sabiniana not reliable, otherwise very fine.

Among the newer varieties of Spruce and very fine is Abies Archangelica, and Whitmanianna, and A. Menziesii, all very fine. A. Douglassi tender, A. Canadensis Macrophylla, very fine.

Of new Junipers, Glauca and Dealbata, both dwarf varieties, very fine. The J. Phœnicea is very distinct, the ends of the branches hang down like the weeping willow. P. Excelsa is certainly very splendid, also J. Variegata and Sabina Variegata.

Retinospora pendula, very fine. R. variegata is tender.

Podocarpus Japonica, hardy, very fine, dark green. Cephalotaxus Fortunii, very fine.

Among the Biota none is quite equal to the golden—in the spring it is particularly charming.

The new dwarf Cypress is certainly very fine, the most dense in growth of any thing I know.

The Picea amabilis appears to be very little known in this country. I quote from "Explorations and Survey of the Pacific Railroad from the Mississippi River to the Pacific Ocean, 1854–5." See article Botany by G. S. Newbery, Botanist and Geologist of the Expedition, pp. 52 & 53:

"Cascade Mountains, latitude 44° 17′, 30 miles north from last on headwaters of McKenzie's Park of the Wilamette River, our camp to night is on the borders of a small lake, in a region formerly covered by a dense forest, which perhaps thirty years since was all burned off. It has been succeeded by clusters and groves principally of silver firs, which, growing in a fertile soil, and not yet crowding each other, have everywhere assumed the symmetrical forms sometimes seen in cultivated grounds.

The young trees of P. amabilis are less regular in form and are handsomer than any other fir I have ever seen.

The range of this tree is apparently less extensive than that of P. grandis, though how far it extends to the north we have no means of knowing at present.

We did not see it elsewhere than in the Cascade Mountains, between latitude 44° and 46°. It is found, however, north of the Columbia and probably exists along the summit of Cascade Range as far south as Mount Pitt, about 42° 40′. I did not see it in the Wilamette Valley, or the Coast Mountains; it is probably confined to the higher portions of those latter mountains, if indeed it exists on them.

The wood is white and would perhaps be used for timber if it were accessible. As a timber tree it is, however, far inferior to many other trees which grow in the valleys and on the coast of Oregon.

Cones of P. amabilis were brought home and seeds have been distributed with a view to its propagation. Should this effort be unsuccessful, it may be obtained from England, where it has been grown from seeds sent home by Douglass. I very much regret that it was never convenient for the artist ot the party, Mr. Young, to take a portrait of this tree, though one would search in vain among cultivated trees for any which should rival in the symmetry of its form, the luxuriance of its foliage, and the size and beauty of its cones —the Western Silver Fir.

Sept. 17.—On the prairie which borders one side of the lake are a few trees of the Silver Fir, with a strong and unimpeded growth, it has here attained a magnitude I have not seen elsewhere. It rises in denser and more symmetrical canes than any other Conifer we have met with. The altitude of the largest trees is more than a hundred feet; the base of the cane formed; the branches resting on the ground not more than twenty feet. The branches are so thick as to prevent all access to the trunk without a vigorous use of the hatchet, and during the pouring rain of the last four days we have always been able to find a dry spot beneath the shelter of its impervious foliage. From these descriptions it will be seen that the Silver Fir forms a dense and slender spire of dark green foliage, which, on the older trees, is rather too formal to be pleasing, unless grouped with other species in which its form and the color of the foliage may contrast agreeably. In the Cascade Mountains I often saw it so combined with P. grandis and Abies Williamsoni, producing groups which seem to me to present the extreme limit of arborescent beauty."

IS AMERICA THE WORST FRUIT GROWING COUNTRY IN THE WORLD?

BY MR. H. W. SARGENT, WODENETHE, N. Y.

P. B., in your February number—referring to my remarks at head of this article—says:

"This statement from Mr. Sargent is astonishing, and I can hardly think it was written in earnest or intended to be literally understood." The statement. Mr. Editor, was made under "an overwhelming sense of defeat" and conviction of the utter impossibility of even a fair amount of success in the culture of fruit—at any rate in my section of the Hudson River.

P. B. says on his return from Europe in September, on visiting some gardens at Boston and Rochester, he saw crops of fruit and healthy trees unequalled in the most celebrated Pear districts in Europe. My experience on reaching home, after more than two years' absence, on the 18th September, was to find my Pear trees generally denuded of leaves, and of course with worthless fruit, and many instances of fire blast. This was also the case I understood with my neighbor Charles Downing, than whom no better cultivator exists; at any rate with all my neighbors, on my side of the river. No Apples—No Peaches —No Nectarines, or Plums, or Apricots. I no longer cultivate the Native Grapes, and cannot speak of their success; but my difficulty in controlling the thrip under glass and red spider is so great as to induce me sometimes to think of abandoning my houses, and I am not a careless or despondent cultivator, nor is the great prevalence of thrip in my houses entirely due to their age, since a new house in my proximity lost all its foliage by 1st September from the ignorance of the gardener, who believed the ripening of the

wood caused by the consumption of the leaves by the thrip hastened the maturity of the Grapes.

Twenty-five year ago—during the earlier days of my friend, the late A. J. Downing—it was as easy for me to raise Nectarines, Apricots, Peaches and Plums in the open air as it is now difficult and costly to raise them under glass. I have had six or eight varieties of Nectarines and Apricots, and over forty of Plums, perfectly fair and ripe in a season. I remember taking a silver medal at the American Institute for the best and finest collection of Apples in the State of New York—now, if prizes were given for the worst Apples, the same orchard would surely take the first prize again, and yet it ought to be in its prime. It is about 28 years old, and has had unremitting care and attention during this period.

The same may be said of Pears. For this same period (25 years) my Pears, both on Quince Stocks and Pear Stocks, have had every advantage that money and science, skill and attention could bestow, and yet every year certain sorts fail and become extinct, and though among two hundred varieties I certainly do get a few which are successful, yet the large majority are disappointing. The Beurre Diel unquestionably for many years was superb, in size, color and flavor, now small, "knarly," and filled (the fruit) with woody fibre. The Virgalieu has long since gone, and the Seckel even seems to be on the decline.

My theory is about fruit that almost every portion of our country, at least of the Middle and Western States, has a season of success from five to twenty-five or thirty years, but that this season, like a cloud passing over the sun, is constantly moving on. Following our emigration—westward.

Certainly what I say applies to the Hudson River, more or less; and yet if wealth, cultivation and amount of glass are worth anything in Fruit Culture, the residences on this river, as well as around Boston, should be an exception; and I again repeat that this same class of residences in England, France, Germany, Spain and Italy would each and all contain and grow with more or less success, a much larger variety of Fruit than are to be found in all these American places together. I was a year in England—two summers—and visited several hundred places, and I never saw one where besides Apples and Pears, all the stone Fruits were not grown, either under glass or on walls.

I do not mean to say that each or every place, always each season, abounded in Peaches, Apricots Plums, Nectarines, Figs and Grapes; but I do mean to say that each place had the trees, and each year more or less the Fruit. While hardly any gentleman's place now-a-days has the trees, and very few gentlemen's younger sons and daughters, on even our finest places, would know a Nectarine or Apricot if they saw one.

Twenty years ago, on my return from Europe, I said America was the finest Fruit Growing country in the world, as I now think it most difficult for its extent. It is quite true as P. B. says that New Jersey will carry to market as many Peaches as are grown in France and England; but neither P. B. or myself want to buy our Peaches when we have a garden and glass, and the soil to raise them. I am forced to buy my Apples, notwithstanding my orchard, twenty years ago, taking the first prize. Let any of our first class country residences, with all their appliances, be moved to England or France, and I maintain they could grow a larger variety of Fruit than they can here.

In fact in England—bad as the Fruit climate is—any place with a wall even can grow anything except perhaps the finer Grapes. Can that be said of any place in this part of the country? Let us look at the character of the February number of the *Gardener's Monthly*, what does it report, the *misfortunes*—not the *successes* of cultivators. What does Oliver Taylor, in Fruit Notes from Virginia, say? "There were so few Curculio here this summer that a Nectarine tree with us broke to pieces with the fruit," so far, so good, "but the *wet was too much* for them, and they *all rotted* just as they were ripening." This has often been my experience. I once had an espalier trellis of about one thousand feet—one half in Apricots and Nectarines, the other half in Plums. To protect them from Curculio they were covered on both sides (the trellis) with a light gauze netting. The remedy was as bad as the disease. The Curculio could not get in, neither could sufficient air; and although I had most abundant crops, and superb fruit, they all rotted from want of circulation—our hot suns after damp moist days destroyed them.

What says Horticola, a page or so ahead,—"Dr. Warder, in his American Pomology, calls America a glorious country for raising Fruit trees." (I agree to this.) "If, however, (Horticola says) he means by raising and managing in order to have Fruit—keeping them in health and protecting them against the host of innumerable enemies lurking around them in the atmosphere, as well as in the soil, Dr. Warder's assertion must be limited,"&c.

"The readers of this magazine" Horticola continues "know that I have patience enough to wait and to try again if I meet with a failure, and if I therefore do not concede that a certain degree of despondency begins to dishearten me, attributable to increasing failures and diminishing success, I do not mean to intimate that I have resolved to give up, but that I cannot help changing my plan of operation, &c." He then gives his experience in cultivating our Native Grape. Certainly not encouraging to amateurs.

Then come three, I think, articles on Pear Blight, and one on the Deterioration of Fruit Orchards. None of these lead us to suppose that all that is necessary to obtain Fruit is to plant a tree.

Mr. Cook, in his experiences on Pear Blight, loses, during the month of August, thirty-four Standards and twenty Dwarfs—being, he says, twelve per cent. of the whole orchard.

No one can rise, after reading this number of the *Gardener's Monthly*, with an idea that America is the best Fruit country in the world—as P. B. would have us believe.

In England, and I take this as certainly the least favorable country for growing Fruit after America. Trees do not die suddenly as our Pears and Apricots and Cherries do. An Apricot sometimes, though very rarely. They have no Borer or Pear Blight, or Yellows there to kill the trees, or Curculio, and much less Red Spider, and Frost 26° below Zero—the present temperature to kill the Fruit. Canker and Moss are the great enemies of the trees, and Sparrows and Wasps of the Fruit. Let any one plant an equal number of Pears, Apples, Apricots, Plums, Peaches and Nectarines in England and in America, and neglect them in both countries for the same length of years. The chances would be all the English trees would survive, while all the Americans would be destroyed by Borer, except the Pears and the Blight would more or less finish them. In conclusion I am willing to confess that when I can grow again the Peach, the Plum, the Nectarine, and the Apricot, and the Gooseberry, with half the success, and even at twice the cost that they may be grown in England, I shall be willing to allow that America, and more especially the Middle and Western portion of it, is not as bad a Fruit Growing country as I now honestly believe it to be.

A WORD MORE ABOUT PEARS.

BY P. B., ROCHESTER, N. Y.

After reading an article in your last number, entitled "Pear and its Culture," by J. C. Thompson, which I did with much pleasure, as being, in the main in the right direction, I thought a few remarks might be added without detriment to the cause.

First, as to preparation of the ground—draining thoroughly, where ground that needs draining is indispensable. As to trenching by hand I find that in this country, where labor is costly, it is next to useless to recommend it, and the plow, in most cases, will answer just as well. Take what is known as the "Double Michigan" plow, or any similar one, with a strong three-horse team, that will turn a furrow 10 or 12 inches deep. We turn 12 inches in stiff and stony soil alike, then the subsoil to follow, loosening and breaking up six inches more.

This will make a good enough preparation, but if a second ploughing of the same sort is given, crossing the first, it will be better still, and some stiff soils may need it. Two teams of three or four horses each will plow in this way ¾ of an acre at least in a day. We frequently plow an acre. This is cheap compared to trenching by hand, and is work that all American farmers know how to perform.

As to varieties—I concur in all that is said of *Beurre Bosc*; it is a noble fruit—perfection in form and pleasing, if not beautiful in color; while the quality is generally good enough. The tree when young is defective in symmetry, inclined to bend and sparse in branches—not what we call a good nursery tree, but when it finally gets up to full bearing size it makes a splendid tree, its fruits not crowded but nicely distributed. A more beautiful sight than a large tree of B. Bosc laden with fruit, about gathering time, is not easily found in Pear orchards.

Columbia, another favorite of Mr. Thompson's is also a noble fruit, and an American at that, but *it will drop* before its time, but those that drop may all be ripened if picked up every day, and those that do hold on keep well till December, and then, both in quality and appearance, it is all that can be desired; but the tree, although a fair grower, is not among the best. Our most profitable trees of this variety are those top-grafted on dwarf trees of White Doyenne. Neither this nor Beurre Bosc succeed directly on the Quince stock. As an early winter Pear, keeping up till Christmas, here, I cannot too highly recommend the *Lawrence*, an American variety too, and closely related to that famous old fruit, the White Doyenne, now so generally in its decline. The more we know of the Lawrence the more highly we esteem it. The tree is a moderate regular symmetrical grower, hardy, and though not among the early bearers, is very productive. When other varieties fail the Lawrence stands by you, and it adheres well to the tree. We have some rows of this variety top-grafted on dwarf trees in the same way as Columbia, to which I referred, and the crops are not only *heavy* but the fruit is full *one-third* larger than it usually is on common standard trees.

For late autumn we have a long list of good sorts, but among them *Beurre d' Anjou* and *Beurre Clairgeau* deserve to stand at the head of the list.

Josephine de Malines has for several years proved itself to be one of the very best late winter Pears. The tree is rather irregular in habit, of moderate vigor, with small leaves, and the fruit is borne in clusters. In size, quality and appearance it is unexceptionable, and it deserves a place in every family collection.

As to Dwarfs "growing in disfavor" I do not agece with Mr. Thompson. Experience has at length shed some needed light on the subject, and most people know pretty well what to plant on the Quince. I think more trees—Pear trees, on the Quince,—have been planted during the last five years than ever before in the same period of time—but they have been planted understandingly and will give a good account of themselves.

If Mr. Thompson will call on Mr. Yeomans of Walworth, in this State, or come to Rochester, he will see how Dwarf Pears stand. Mr. Thompson adds the Seckel to the Duchess because it "runs into a Standard." This is bad logic—why not plant the Standard at once? To the Duchess, as dwarf, I could add the *Louise Bonne de Jersey*, *Beurre d' Anjou* and *Howell* for a small list, where these varieties succeed, and that will be in nearly all Pear growing districts.

GARDEN AND GROUNDS OF J. W. GORDON, Esq., CLEVELAND, O.

BY MR. R. BUIST, PHILA.

You, Mr. Editor, have no doubt visited the celebrated suburban residence of the late Dowager Duchess of Bedford, at Camden Hill, near London, where all the landscape talent was brought to bear upon a few acres of ground.

It made such an impression upon me, fifteen years ago, that I could readily portray it upon this sheet. That, however, is not my purpose. Our Western tour, the past season, left many favorable impressions upon me, one of which allow me to lay before your readers.

The residence and grounds of W. J. Gordon, Esq., of Cleveland, Ohio, comprise three acres of land laid out in masterly style, and kept by his gardener, W. T. Harding. You enter upon a beautiful lawn, slightly concave, with an occasional artificial rock projecting. The backgrounds have clumps of Rhododendrons and low shrubbery; the different varieties of Coleus and Senecio maritima (Dusty Miller), are used in the form of ribbon decoration, with edging of Telanthera versicolor. Beds of the General Grant Scarlet Geranium, profusely in bloom, edged with Nierembergia grandiflora; the Cannas with various colored leaves were used as back rows or centres. The artistical effect of so much colored foliage was very impressive (example, we may have a flower garden with all the colors of the rainbow without any flowers).

In the distance were the ruins of an old English Abbey, fifty feet high, its stained glass, broken sash, and displaced medallion, looked centuries old, but had only existed a few years. Its use was to hide a disagreeable object outside of the enclosure.

On the left you enter a hothouse filled with elegant plants, such as Tree Ferns, Dracœnas, Cyanophyllums, &c. Onward, a greenhouse filled with foliaged plants. In many establishments this house is neglected during the summer months: here, it was enchanting and lively. A grapery well loaded with fruit; a rosary that is covered with sash and forced in winter; a violet pit for Christmas bouquets.

To the right you enter a spacious Camellia and Azalea house—every plant a specimen, and every specimen a picture of living green. To this joins an Orchid House filled with Catleyas. Dendrobiums, Oncidiums, Stanhopeas, &c., having a neat cascade and waterfall—natural, indeed. Here, again, a Cactus house, with contents clean and healthy; and there, unexpectedly, a span-roofed Orchard house, divided for Grapes and fruit trees, all in pots. This is an excellent idea, as the heat required for Grapes in bloom and setting fruit is higher than that of fruit trees. The crop was over, but the trees and vines indicated excellent management.

From this house you descend a steep declivity to ponds and waterfalls, a rustic bridge leading to a grotto. A few steps more and you face an Alcove, and to the right there is an underground passage to the stables.

The very peculiar character of the ground, and consummate skill in the arrangement insulating all these objects, that the visitor is imperceptibly and unexpectedly led from point to point, where all is terminated by a magnificent view of Lake Erie.

This rare and picturesque place is kept in the most perfect order: the potting shed and tool house are a card. The gardener and assistants were intently engaged as if every eye of the family was upon them, whereas the whole family are in Europe, and will not return until next season.

When absence of family occurs in the establishments of our wealthy, how often all is allowed to go down, and, in fact, looks like a wreck, requiring years of labor and extra expenditure to put the whole in passable condition. Mr. Gordon's course is laudable, agreeable to his feelings and friends, and, as a pecuniary matter, it is actually *economy* in keeping everything in order and in its place.

SOUTHERN PEACHES.

BY MR. P. J. BERCKMANS, AUGUSTA, GA.

In the article on "Southern Peaches" by Mr. J. A. Nelson, (in your Jannary number,) I find a few errors as regards the descriptions; and, as Mr. Nelson says, that "*In getting the above varieties some few gave no description of fruit, only as highly recommended, they may not be true to name.*" I take, therefore, the liberty of making a few corrections.

The *Tecumseh Peach* originated upon our place; the original tree is still standing, being now some 25 or 28 years old. It was raised by the late Mr. Coleman, the former owner. It is a very late freestone, of good quality, ripening here in the latter part of October, and often lasting until the 15th of November. It is, however, superseded by *Lady Parham*, which was raised by Thomas Affleck, Esq., formerly of Mississippi. This I consider our best late freestone; but, of course, of no value so far north as Pennsylvania, as it is only ripe here by the end of October.

For *Hopkinsville*, Mr. Nelson has a different fruit from that sent me by Mr. J. S. Downer, ten years since. As Mr. Downer originated or diffused the variety, I conclude that I received mine from the true source. As fruited from the original trees the description is: medium to large, conical; skin white nearly covered with red; flesh white, juicy, good; freestone; ripens (here) August 1st.

Exquisite, a white-fleshed freestone, ripening (here) middle of July. Resembles the *Grosse Mignonne*, and originated by A. de Cardenc, Esq., of South Carolina. Mr. Nelson has, no doubt, the *Osceola* for the Exquisite, as his description answers somewhat for that variety, with the addition that the flesh of the Osceola is of a rich golden yellow and exquisite apricot flavor. It ripens here beginning of September, and at Mr. Chas. Downing's about the middle of October.

Golden Ball is a sub-variety of the Indian type and a shy bearer. I have discarded it as possessing no peculiar merit.

Pace or *Finley* originated upon an adjoining plantation formerly owned by a Mr. Pace. Seeds of this Peach were sent to Mr. Cox, many years ago, and these produced the variety called by him *Columbia*,—under which name the Pace is generally known throughout the Southern States. It has many synonyms, caused by the facility with which the variety reproduces itself from seed with very slight variations.

Leopold. I received this Peach from Mr. Downer and, like Mr. Nelson, found it a cling. If intended for the Belgian Peach, Leopold 1st, it is entirely incorrect, as the latter is a white freestone.

White Globe is a reproduction of the Late White Heath. This type, like the Columbia, Lemon Cling, and a few others, reproduces itself identically by seed; hence its numerous synonyms throughout the country, such as White English Cling, Eliza Thomas, Henrietta, &c.

Demminger's September is a reproduction of Lemon Cling, ripening one month later than that favorite variety.

Indian Blood Cling. We consider this one of our best clingstones, and were I to select only 2 clings out our numerous varieties, I would first take the Chinese Cling, and the Indian Blood Cling next. As with the *Columbia* or *Pace Peach*, the Indian Blood belongs to a popular Southern type, easily reproduced by seed; some varieties, however, having slight modifications, such as being more or less red fleshed, but all having the peculiar markings of the type, such as skin downy and rough and striped. The peculiar *vinous* quality of this Peach can only be attained in a warm climate and a warm porous soil, and when eaten fresh from the tree, as all clingstones should be, there is no Peach of its class that surpasses the *Indian Cling.*

COOK'S TOMATOES.

BY T. G., VINELAND, N. J.

Having observed in your January number that J. R . S. considers the "Cook's Favorite Tomato a *worthless*, *hollow* sort," I am prompted to give your readers my experience of two years fruiting that variety. I raise them for a late crop.

My usual mode is to set them 4 by 4 feet, on the same ground after a crop of early peas, they being the second crop. I find by reference to my Day Book, the plants were set on the 22d and 23d days of June, 1866, on one acre, measured for the purpose of testing the bearing qualities of that variety. On the 23rd of August picked the first ripe fruit—5 baskets—(⅝ of a bushel to a basket), and on the 8th day of September, at one picking, picked 49 baskets from that acre. Whole amount picked from acre five hundred and fifty (550) baskets. The plants were killed by frost on the 6th of October, the vines, at the time, having a great number of tomatoes in the various stages of growing and ripening on them. In the early part of the season I counted as many as 160 tomatoes on a plant.

I consider their specific gravity equal to any other variety. I had one bushel weighed for the purpose of exhibition at our Annual Fair. Selected fruit, weight 57 pounds. I sold to Messrs. Sharp, Fries & Co., of Millville, between one and two thousand baskets, at 31 cents per basket, at the same time they were paying but 25 cents per basket for other varieties. They tested them, and found they would fill full fifty per cent. more cans per basket than the other varieties, and unhesitatingly pronounced them the very *best* tomatoes they ever had canned. They were so pleased with them, they procured seed of that variety and distributed it among their growers, and desired to have no other. Last summer I also grew them extensively, (for a new beginner,) and was offered by Messrs. S. F. & Cc., as high as 40 cents per bushel for them.

I visited New York City markets in the month of August, 1866, also Long Island, conversing freely with the fancy truckers for the express purpose of finding out the *best* variety of tomato to raise. Found the tomato that brought the highest price in market, and was the most approved by the truckers, was there known as the *Peach* Tomato, and grown by some of them for more than twenty years. I believe it to be none other than the variety known here as the *Cook's Favorite.*

I have grown several varieties previous to the past season—Fejee, Large Red, Landreth's Extra Early, and many other varieties, names not known to me. I consider "Cook's Favorite" the best for a late crop, and Landreth's Extra Early for an early crop.

I have sold from the latter variety on the 8th of July, 1867, fruit at $5 per basket in the Dock St. Market. I consider the former strong feeders, requiring good fertilizing; fruit medium size, more true to shape than any other variety; ripens up uniformly to the very stem. I am requested by the above Manufacturing Co. to order, for them, 5 pounds of seed of the Cook's Favorite for the coming season, after testing them 2 years.

EDITORIAL.

FAILURES IN PEAR CULTURE.

It is a remarkable fact, that notwithstanding the erroneous principles of Fruit Culture so prevalent, and which we have labored for so many years to show to be wrong, those who have opposed, and continue to oppose, any departure from these principles are mainly those who continue to record their failures, and are ready to pronounce Fruit Culture "a humbug." Take for instance Mr. Quinn, whose admirable essay last September, before the Pennsylvania Horticultural Society, has been so widely read and commented on. His views of Pear Culture are undoubtedly the very best that could be founded on the old style system; and yet with that candor which has always made anything from Mr. Quinn have weight, he freely acknowledges that he has failed totally with his system. He says, "after fourteen years of practical experience with Pears and their culture, and having had under my charge part of that time more than 100 varieties, I have come to the conclusion, contrary to my former views, that, with a single exception, (the Duchesse d' Angouleme), the culture of the dwarf Pear is a failure. To hold out any longer would be obstinacy. How long the Duchesse will do well I am not prepared to say." Mr. Yoemans we believe has had to graft over most of his with Duchesse. Mr. Parry has abandoned the whole culture, we believe. Mr. Satterthwaite, as we judge from his remarks in public, has no longer much faith in dwarfs, and indeed it is well known to all readers of agricultural journals that at all the meetings of Fruit growers the reports of failures in Fruit Growing are loud and deep. Yet some people do grow Fruit, and there is much grown—this side of the question Mr. Barry ably maintains; a correct system makes the difference.

Now when we find men deploring the results of the systems they have advocated, is it not strange to find them resolutely clinging to them, and rather disposed to ridicule than to aid those who would help them in finding a better one?

Let us take particularly the Dwarf Pear which the advocates of the old systems of culture seem to have especially agreed on abandoning the culture of, except in the case of a very limited number of varieties.

Here we have a fruit grafted on a stock expressly for the purpose of checking its vitality in order that the great result of weakened vitality, early bearing, should follow. Having placed them under circumstances to make them grow slow, we then manure them very highly to make them grow fast, and then when they get a-going on this fast line, we are offended, and take to summer pruning to again weaken them and make them grow slow. What can we expect of such a mass of contradictory practices?

Then again, it is now known that all the best feeding fibres are near the surface. One near the top is worth fifty, four inches below. Yet in spite of this knowledge, a system is followed which tears away all these surface feeders every few weeks, and the tree is forced to a succulency which is admirable in Corn, Cabbage, or Asparagus, but of little account in forming hard healthy wood in a tree.

The season is now come when it will be well for Fruit growers to think of these things. We have no pet theories to advocate, or practices to defend. Here, on the one hand, is a wide-spread dissatisfaction with prevailing systems, so much so that some of the best advocates of these practices are actually abandoning some branches of Fruit Culture,—on the other hand we point out the inconsistencies of their principles, and if we sometimes present other practices, it is not that we think them the best that can be devised, but as the best we know, and hoping if others do not approve of them, to hear of some more still better.

NOTES OF WESTERN TRAVEL.

The vicinity of Cincinnati is admirably suited to fine specimens of art in Architecture and Landscape Gardening, and these natural advantages have been made available by numerous gentlemen, whose country seats and suburban homes abound in every direction, and furnish a greater number of well-kept places, and with a nicer appreciation of correct taste than we think any city in the Union can boast of.

Along some of the roads radiating from the city, the sides are lined with such pretty specimens; and as many of them have no entrance gates, and others with no fences but Arborvitæ, Osage Orange, or other hedge plants, it seems more like a drive along a private park than a public road. Limited to time, we could not call on many friends whose places were pointed out to us while driving by,—but we could not resist the temptation of turning in to the beautiful grounds of H. Probasco, Esq., especially as they had recently been made the subject of a notice by Mr. Parton, in the *Atlantic Monthly*. Certainly there is much to praise in the house and grounds, and if we may be allowed a friendly criticism, we could only say that there are too many evergreens, too few masses of flowering shrubs, and the style of gardening, tasteful and beautiful as it is, is too much the prevailing taste of Cincinnati to be *matchless;* and yet the natural contour of surface afforded an excellent chance to employ a different style which would have been as pleasing as the one now selected.

For the great prevalence of evergreens however much must be allowed to the arboricultural tastes of Mr. Probasco, which, of course, will at times interfere with the love of mere landscape effect. The Coniferæ especially seem to find in him a munificent patron.

Here were many scores of such rare things as Picea Nordmanniana, pichta, Pinus grandis, &c. imported from Europe, in quantities enough to ruin the business of most American nurserymen, who seldom meet with such liberal men as Mr. Probasco, who would encourage them to get up a stock of such things.

What Mr. Probasco's place is as a country seat, Mr. Shelleto's is as a suburban residence—a type of excellence in the art. It is too common an error to treat the house and small grounds of this character, on the same principles as rule in the larger country places; but in the one case there should be very little pure art displayed, and the best results will be where natural scenery is the leader and guide. The nearer the city however, more artificial styles of gardening and architecture please; and what are called natural places, look puny and are really disagreeable. The designer of Mr. Shelleto's house and grounds has avoided these errors. The house is beyond grand; it is really a magnificent specimen of architectural taste. The grounds comprise about four acres, the whole surrounded by a low wall, which is topped by a carved capping of the same beautiful gray stone, known here as Portsmouth Sandstone. We were informed the cost of the place was $150,000.

The commercial gardening of Cincinnati is still prosperous. Of course the Grape interest is largely represented, but the finer branches receive much encouragement. Mr. J. S. Cook of Walnut Hills has many fine greenhouses, and such rare things as Begonias, Ferns, receive a considerable share of attention. The nursery grounds embrace about 40 acres, and as the land is considered worth $5,000 per acre, the business should be considered good to stand it.

A few minutes at Mr. Pfieffer's, one of the earliest and best friends of the *Monthly* in Cincinnati, found the Grape now the chief subject of interest. Fruiting specimens of all the leading varieties were just in order for testing, and one of the best and most vigorous lots of Ives' Seedling about the place we saw here. In a circle in front of the dwelling house was a large lot of the General Grant Geranium, which we have heard suggested might be a shy bloomer; but which was here flowering in profusion. The seed store has been sold to Mr. Knott, on whom we called but found him not. We did find a very nice collection of greenhouses principally for bouquet flowers, with more new ones building. In one house was an immense rose planted out in the open ground, and a very old and large Heliotrope, from which many a hundred dollars worth of flowers had been cut in their time, and "good for many more" was plainly engraved on their constitutions. This is one of the best ways of getting profitable plants for cuttings of these things. In the neighborhood we found an old correspondent of the *Monthly*, Thomas Hutchinson, whose skill in growing bedding plants has been recorded. These indeed are the leading features of his trade.

Time acted tyranically to us, and gave us no chance to see many seedsmen friends. We made a passing call at Wilder's and Stoms', and found them both in good spirits at the prospects of a thriving trade. The former does much in the way of recieving fruits on commission, and thousands of boxes of Peaches were then arriving, and being again distributed to all places round.

A few miles outside of the city, at Lockland Station, we found the nursery of Mr. Francis Pentland, the favorite gardener of the late Mr. Longworth, and whose happy, good-humored face, once seen, no one ever forgets. His nursery of 20 acres was fully stocked with fruit and ornamental trees, and the whole place far better kept than many we saw West. The Cherry trees were particularly healthy and nice. He also gives great attention to rare and choice flowers, and bedding plants, and will no doubt in a few years be amongst the leading American nurserymen, as he has a worthy ambition equal to his skill. Mr. Heaver and Mr. McCullough, have both fine places, but with a disinterestedness, we seldom have the opportunity of admiring, and shall hereafter run no danger of forgetting, generously gave themselves up as our guides to those places where we could see the most in the shortest time, instead of to their own isolated places.

CURCULIO.

Dr. Hall of Alton, Ill., as we saw with own eyes last summer, has conquered the Curculio. The Alton Horticultural Society has published a very valuable essay by this gentleman. He shows the insect punctures and injures other fruits, but the larva do not perfect themselves. No good therefore results from destroying such fruit, so far as Curculio are concerned. He finds the decay from stung Plums, resting against a shoot, will sometimes produce Plum knots. It has been noticed that some Plums perfect though "stung," this the author says is owing to the eggs being destroyed by a few days wet weather, before they develop much. They rarely fly at night, and not often in warm days. One Curculio lays from 19 to 53 eggs, occupying at most 18 days. The insect easily falls from the tree by a sudden jar. As to remedies, lime has been found a little benefit in wet weather, but none in dry. Hogs, &c., in orchards to eat the fallen fruit have been found a little good.

The author's Curculio Catcher has been found effectual : this we can personally corroborate, and we think it no more than justice that the many offers that have been made from time to time of premiums and rewards for successful remedies be paid to Dr. Hull. If some recognition of his success is not made by societies that have made offers, we shall not highly appreciate similar offers in future. The following is a description of the machine—we have referred to it in past volumes, but this account is very clear :

"To make a Curculio Catcher we first obtain a light wheel, not to exceed three feet in diameter, the axletree of which should be about ten inches long. We next construct a pair of handles, similar to those of a wheelbarrow, but much more depressed at the point designed to receive the bearings of the axletree, and extending forward of the wheel just far enough to admit a cross beam to connect the handles at this point, one-and-a-half inches in the rear of the wheel a second cross beam is framed into the handles, and eighteen to twenty-four inches further back a third. The two last named cross beams have framed to their under sides a fourth piece centrally, between the handles and pointing in the direction of the wheel. To the handles and to the three last named pieces the arm or ribs to support the canvass are to be fastened. To the front part of the beam connecting the handles in front of the wheel, the ram is attached, this should be covered with leather stuffed with furniture moss, a dozen or more thicknesses of old hat or leather or other substance, being careful to use no more than necessary to protect the tree from bruising. Ascertain the elevation the handles should have in driving and support them in that position We now put in place the stretchers or arms, six for each side, which are to receive and support the canvass. We put the front arms in position. These extend back to near the centre of the wheel on each side and in front of the wheel (for large machines, say six feet,) and are far enough apart to receive the largest tree between them on which it is intended to operate. The remaining arms are supported on the handles, and fastened to them and to the two cross and parallel pieces in the rear of the wheel. These are so placed as to divide the space at their outer ends equally between them and the first mentioned stretchers, and fastened to the ends of the handles. Next we have ready a strip of half-inch board two-and-a-half feet wide. One end of this is secured to the forward end of one of the front arms, and in like manner to all the others on one side of the machine, and fastened to the handles. Both sides are made alike. The office of these strips is to hold the outside ends of the arms in position; they also hold the front arms from closing. These outside strips also receive the outside edge of the canvass which is fastened to them as well as the several arm supports.

It will be seen that the wheel is nearly in the centre of the machine. To cover the opening at this point, a frame is raised over it, which is also covered with canvass. The arms, or stretchers, are so curved that the motion of the machine, in moving from one tree to another, should bring everything falling on the canvass to depressed points, one on each side of the wheel, where openings are made into funnels emptying into pockets or bags, for the reception of insects and fallen fruit. The whole machine should not exceed ten or eleven feet in breadth by twelve or thirteen in length. These are for large orchard trees; smaller ones could be protected with a much smaller machine. If the frame work has been properly balanced, the machine will require but little lifting, and will be nearly propelled by its own weight.

This Curculio Catcher, or machine, is run against the tree three or four times, with sufficient force to impart a decided jarring motion to all its parts. The operator then backs far enough to bring the machine to the centre of the space between the rows, turns round and in like manner butts the tree in the opposite row. In this way, a man may operate on three hundred trees per hour.

PARK AT NEWARK, NEW JERSEY.

We are sorry to see by the *Newark Advertiser*, that the citizens of that place have voted against having the proposed grand Park.

The ground taken was that such a disposition of the public funds was an imposition on the "hard-fisted mechanics, who always have to pay the taxes." In our time we have never known of a public improvement that was not opposed as oppressive to the poor, and which did not prove after adoption to be of more benefit to the poor than to any other class.

While in the West last year, a town of 40,000, between two rivers, we found without public water works ; and the reason given was that the poor opposed. "They didn't want to use the water, nor, of course, to pay taxes to get water for others to use." More money had been spent in that town on "cisterns" than would have fixed up a dozen water works, and sustained all the poor in the place a year in idleness. Our friends in Newark had better try again.

LONICERA (*Caprifolium*) BRACHYPODA.

Under this name a Honeysuckle is cultivated in gardens, which is really desirable for many different purposes. In the first place it is a genuine evergreen, and then it thrives admirably in the shade. It creeps likes Ivy and makes an excellent green carpeting in shady places under trees where grass will not grow. A fault with most Honeysuckles is that on wire trellises they soon get to the top, and leave the bottom bare. This one always keeps well filled from bottom to top. Although doing well in the shade it is still better in the sun, in which case it blooms more freely than under any other circumstances. Its glossy green leaves are always pleasant to look upon. But the height of its glory is to get a run over rock work, or a pile of old stumps ; nothing can excel its great beauty in such instances.

SCRAPS AND QUERIES.

Dwarf Shrubs for Greenwood.—*J. H.* says : "In looking over the *Monthly* for 2nd mo. (February),a most excellent number by the way, I noticed a list of Dwarf Shrubs for Greenwood. Does the Weigelia, Pyrus, Calycanthus, Philadelphus, grow no higher than 3 to 5 feet. On our poor Long Island soil, near the Hempstead Plains, they grow 8 to 10 feet. Of course they will not if properly cut back ; but who will do it ? Haven't I seen some at Meehan's Germantown Nurseries much over 5 feet ?

[Our correspondent is right ; yet they are so long before they get so high, and many often do not reach the named sizes, that we still think they come under the *spirit* of the question asked us, *if not to the very letter*.]

Manure Queries.—*S. L. A., Cinnaminson, N. J.*—Which is most valuable, a ton of long fresh livery stable manure, made under shelter, or the same weight of the same manure worked over in the open air till short, not for immediate use ? Will a ton of the long manure, worked over until short, have gained or lost in weight?

[Manure under cover is better than manure exposed, theoretically, because the "juice" does not wash away : practically, because we have seen it carefully tried. The long and the short of this part of the matter is, that it pays to cover manure.

Whether the long manure which has got short in the open air gets short or long in weight we cannot say ; although it is likely it will increase in weight. The real fertilizing matter will most likely get washed away, and the pores filled with pure water, which is a heavier material, or the coloring matter would not float on the water when washed away. We should, at a guess, decide such manure to be heavier, and to *decrease* in value with its weight.]

Martha, Iona and Adirondac Grapes.—*J. H., Litiz, Pa.*, says : "I have on the same trellis with a Martha, the Iona on one side and the Adirondac on the other, of same age (4 years) and same care and cultivation. But the Martha is now fully $\frac{3}{4}$ of an inch in diameter above the ground, and fruited twice,while these have never shown a blossom, and are now the size of a wheat straw. At about midsummer, the leaves drop from the vine, killed by mildew, and the vines stop growing. I don't expect they will ever fruit with me."

Horticultural Patents.—*S.* says : I notice that a patent has been granted to one Mr. Vermilga, of Dayton, Ohio, for an 'Invigorating Composition for Fruit Trees,' consisting of

3 lbs. Sulphate of copper,
1 lb. Sulphur,
1 oz. Saltpetre,
$\frac{1}{2}$ lb. Iron Filings."

[Judge Cadwallader of Pa. has decided that want of novelty is fatal to a patent-right. There is no novelty in the above—all of the items, and in about the same proportion, have been used to

"Invigorate Fruit Trees," by those of old time. The taste for horticultural patents is a curious one. Why not patent the use of dead monkeys for Pear trees? Dead hogs have been tried, but monkeys would be a "novel" idea.

Shelter to Orchards.—*J. H., Lancaster Co. Pa.*, says: "In planting a shelter to my young orchard I have two objects in view: first, to shield the trees from severe cold winds in winter, and in summer from blowing down the fruit; and, second, to afford a home for the birds in summer, and some kinds of birds in winter also. What shall I plant?

[Try Scotch Pine.]

The "Patrons of Husbandry" is a new secret order, similar to Freemasonry, having for its main object the advancement of agriculture. We do not see why it should not be as popular as any such institution. The following are the officers:

Master,	WILLIAM SAUNDERS,	*D. C.*
Lecturer,	J. R. THOMPSON,	*Vermont.*
Overseer,	ANSON BARTLETT,	*Ohio.*
Steward,	WILLIAM MUIR,	*Missouri.*
Asst. Stew'd,	A. S. MOSS,	*New York.*
Chaplain,	Rev. A. B. GROSH,	*Penna.*
Treasurer,	WM. M. IRELAND,	*Penna.*
Secretary,	O. H. KELLEY,	*Minnesota.*
GateKeeper,	ED. P. FARIS,	*Illinois.*

Hardiness of Clarke Raspberry.—*Mr. Zirngiebel, Needham, Mass.*, writes: "It may interest some of the readers of the *Monthly* to hear that the *Clarke Raspberry* stood the winter perfectly well—green to the very tips. A fair test, I suppose, as we had the thermometer as low as 24° below zero, the first part of February. *Philadelphia* also stood well.

[Our readers must not forget that temperature has nothing to do with the hardiness of a Raspberry or Blackberry. If they keep free from the Blackberry rust in August and September, the lowest temperature will not injure them. If they then get the rust the canes do not ripen, and 10° of frost will kill them. The great question then is, is any variety free from rust? So far the Clarke and Philadelphia have behaved very well n this respect. Others will, also, at times. We have some Linsley's Fastolff Seedlings, which are now quite "uninjured" by the winter; but they had no rust last fall.]

California Gardening—*B. of B., Delaware, O.*, asks: Can you give me any information as regards California as a fruit and vegetable country for market gardeners. I should like to know the market value of fruits and vegetables, cost of labor or productions, and whether the consumption or demand will warrant a skilled hand in emigrating to that State? Can you inform me of the best horticultural paper or journal (of California) and where to be obtained out here. If you or any of your numerous contributors can give any information on the subject, you will greatly oblige me.

[We have known many to go to California, and with the usual result in all cases of emigration, namely, a few do very well, but the majority do no better in the change. Labor is very well paid —on the other hand, expenses are enormous, so that if one gets out of work, or misfortune overtakes him, all he has earned soon goes. The *California Farmer* at San Francisco, a weekly paper, is the only journal of the kind in California. Most of the vegetables of the East grow, and are in as much demand in California.

Amongst the deaths of the month, we are very sorry to record those of Mr. Samuel Feast, Jr., of Baltimore, and Mr. Peter Mackenzie, of Philadelphia. The Horticultural Society will take official notice of the latter, and the proceedings we shall publish next month.

Mustard Seed.—*M., Harrisburg, Pa.*, inquires:—"Please state how early Mustard must be sown to ripen seed the same season."

[We have had no experience with this as a market crop; but suppose if sown early in spring it would ripen early the same season.]

Winter along Lake Michigan.—*C. T. Nathurst* says; "Our winter has been mild for this latitude. We are near the South shore of Lake Michigan, and the prospect of fruit is great at present. Our Horticultural Society is "reconstructing," and expects to go on more favorably than heretofore.

Thornless Black Cap.—*N. E. D.* sends us a few buds to show how hardy it has proved during the past winter. But all Black Caps are hardy, or ought to be. We suppose this is Davison's Thornless. Possibly this variety is a very good thing—we have not seen it growing. These pieces of canes we are unable to distinguish from the old Purple Cane, which is often *thornless.*

Fungus Theory of Blight.—*J. H.* says: I like the fungus theory of blighting Pear trees. Here our soil is too poor generally; and the bark

is, of course, too rough for the fungus to lodge on. I have seen a few specimens on Parsons' highly-manured grounds blight, but they will not unless highly forced.

[The fungus theory of fire blight in the Pear needs nothing but a pair of good eyes and a disposition to use them to satisfy doubters; although, as it is not mentioned in the "great authority, Dubrieul," it ought, according to Boston logic, to take some time to "see it."]

Tomatoes Against Fences.—*H., Long Island*, says: I liked the plan of planting tomatoes against a board fence, that I shall try it again. We use old nursery boxes for fences; drove stakes in the ground, between which we put the sides of said boxes.

[We have heard truckmen say L. B.'s plan "won't pay." We know any amateur with a small yard who tries it will not stop it.]

Winter-killing of Evergreens.—*J. C. K., West Philadelphia, Pa.*, asks: Can you tell me the lowest point reached by the thermometer in Philadelphia the past winter. I was under the impression that 2° below zero was the lowest, but as I see Hemlock Spruces and other evergreens killed or seriously injured, that escaped unhurt a few winters ago when the thermometer was 13° below zero, I suppose the thermometer must have been lower than I supposed."

[Our correspondent cannot have long been a reader of the *Gardener's Monthly*, or he would know that low temperature is not a direct cause of *death* to vegetation. In our district vegetation suffered more than ever before—but we believe 5° below zero was the lowest degree.]

Celtis.—*J. H., Hempstead, N. Y.*, says: "Last summer, in company with Pierce Hoopes and lady, we found a most beautiful Celtis tree. The owner had no name but Sugar Berry, and thought it was brought from England. Our Celtis is a very poor tree, but this resembled a beautiful Osage Orange; leaves dark green, very abundant head, of a globose form. Hoopes had never seen anything like it. On the strength of that specimen we have ordered several from E. T. Transon & Bro. Does thee know anything about the foreign varieties?

[Notwithstanding the eminent authority of Mr. McMinn, the late Dr. Darlington and other distinguished botanists, we believe all the Celtises in Pennsylvania are forms of *C. occidentalis.* These can be had in almost any Nursery in Pennsylvania that keeps a general collection of Ornamental trees, notwithstanding the wonder of our Boston contemporary that "no nursery keeps them." There is only one species in Europe, *C. Australis*, which our friend can see in the "Germantown" collection, if he will make himself known, or ask for it next time he calls. It is not near as much like the form he describes as our native ones.

Tilden Tomato.—*Henry Clayton, Middletown Del.* writes that he planted three-quarters of an acre of Tilden, and many Early Smooth Red and some Keyes' Prolific. The Keyes' gave a few small ones, ripe 6 days ahead of the others—but the yield too small to be profitable. The Tilden ripened about the same time as Early Smooth Red, and yielded double the quantity. The fruit of the Tilden in that neighborhood is universally spoken of in high praise.

Pruning to Promote Growth.—In the March number of the *Horticulturist*, Mr. John Ellis has some sensible remarks on pruning. When a vine or tree grows poorly, or is otherwise stunted and scrubby, he cuts it down; this induces a vigorous start of leaves, and the result is a vigorous growth of roots. This is the experience of all good gardeners, and accords with the practice we almost monthly recommend to our readers.

Our Pear Trees Doomed.—Under this head a Boston contemporary thus speaks of the Essay by Mr. Meehan, before the American Pomolgical Society at St. Louis:

"In an Essay, read before the American Pomological Society, the writer says that 'he is well assured that though fire blight, cracking and other diseases are the means of destruction to *many thousands* of bushels of pears *annually*, debility destroys its *tens of thousands.*' We had thought fire blight, so called, was bad enough in the west, but we have never heard anything about debility. We hope it will not attack the fine pear orchards in the neighborhood of Boston. Dubrieul, the great French authority, does not mention this disease, nor do we find it in Thomas or Barry, and we apprehend it must be peculiar to the locality of the writer."

No doubt it is audacious to suggest anything beyond what the omniscient "we" had ever heard of, and Mr. M. will, no doubt, beg pardon in due time. As we understand, Mr. M. did not go to St. Louis, to repeat what Thomas, Barry, or Dubrieul, "the great French authority" on American Gardening, had said. Lack of originality may be a merit peculiar to magazines published at Boston—but we should hardly suppose it would be looked for or esteemed in a public speaker.

Advertising in the Monthly—the Weehawken Grape.—Mr. D'Oench, of St. Louis, writes that, seeing an advertisement of this grape in the *Monthly*, he sent $5 to Dr. Siedhoff, and got no Grape. He has written several letters since to Dr. S., and can get no reply from him. Mr. D'Oench is a gentleman, and we have never had any reason to suppose Dr. Siedhoff was otherwise. As, however, we recognize a duty to our readers in the matter of advertisements, to a certain extent, we give the facts as stated to us.

Agriculture in Cities. It is a sign of the times, showing the increased influence of Agriculture, that so many city papers are casting about for Agricultural Editors, who have had some little more than library experience for such positions. In this connection, Mr. Meehan has been induced to accept a position on the Philadelphia *Press*; Mr. Fuller on the New York *Sun;* and in the West, we see some talk of a similar movement in the St. Louis papers. Mr. D. P. Wier, a well-known Western horticulturist, has been engaged for the Lacon (Ills.) *Home Journal.*

Horse Radish.—*Friend Hicks* says: I can inform our friends how they can raise horse-radish without taking up unnecessary room and without manure. Two years ago we threw the crown and pieces of roots on the woodpile. They were accidentally covered up, and we were surprised to have fine horse radish growing among the wood-pile chips. We like the plan, as they are not in the way in winter, as we cover them with logs, and the roots can be dug sooner for it, and in summer they are not as unsightly as stramonium and other weeds are.

Page's Patent Pump-lifter.—Mr. Page, the inventor, called on us last fall with one of his pumps, and it pleased us much. The principle is simple, and the arrangement by which any kind of a stream, from a shower of dew to a stream of rain, is very effective. We have not had any in use, but, from appearances, really believe it to be a valuable invention.

Insect Eggs.—*A Farmer*, *Elwood*, *N. J.*, writes: "I enclose a piece of grape wood on which I have discovered eggs of some kind. Will you inform me, through the *Monthly*, what they are?

[Katydid.]

"Wine Plant." The following has been handed to us by a Philadelphia "Subscriber."—Extract—"*Weekly Tribune.*"—American Institute Farmers Club—New York—meeting, Tuesday, March 3, 1868.

Rhubarb Wine. — The Club unanimously adopted the following resolution:

Resolved—By the Farmers Club of the American Institute, "that the selling of common rhubarb or pie plant, in its different varieties, as a *Wine Plant*, is an attempt to deceive and to defraud the people of this country."

Mr. Carpenter. I am glad this resolution has passed, but it is not strong enough. This wine plant is more than an imposition. It contains none of the properties of wine, and it is injurious. Hundreds of barrels are brought into this city (N. Y.) and sold from 25 to 50 cents per gallon, and is used to adulterate other wines.

A. S. Fuller. I am glad to see this subject introduced—other miserable wines have been encouraged. We have had quite enough of Portugal Grapes that grow on the Hackensack River.

Dr. Snodgrass—Was glad the club had taken the initial step towards condemning these wines, and he hoped the day would come when they would unanimously protest against the exhibition of all alcoholic liquors.

[The above extract affords some curious reflection. While the "Farmers" of New York in "club" assembled, take the "initiatory" step, by exploding a deadly discharge of "resolutions," to put down a fraud, Pennsylvanians, a year or too ago, took a less noisy, but more certain method, as described at the time in the *Gardener's Monthly*, of having venders imprisoned for selling things for wine plants, which they well knew were nothing but rhubarb plants. We offer this plan as an amendment to the club resolves.

Again, why is the fury of the club reserved for the Rhubarb Wine? Under its nose for years, in an elegant Broadway establishment, thousands of gallons of "wine" are sold which it is asserted is made from a *grape*, but which we informed our readers five years ago was a fraud, being made from Brandy and Elderberries; and we have therefore looked anxiuosly and annually, for the "club" and our other New York friends who are hard on little humbugs, and easy on big ones, to take the "initiatory steps" towards "the discovery of the fraud."]

Easter Beurre at Parker Earle's, *South Pass*, *Ill.*—I find an error in your report of the running debate on Pears at St. Louis. I am reported as saying of Beurre Easter that it is of poor quality at South Pass—which most certainly I did *not* say. If I made any remark concerning it, it was of precisely an opposite character. I am a little sensitive on the point, as I am on the record everywhere in favor of the Easter, and have taken much pains to call the attention of our Pear men to its excellence and great value in Southern Illinois. In our long seasons it ripens very perfectly, and it may be in use during the whole winter. There are few more important pears for us in "Egypt."

P. S. Winter very favorable, and fruit prospect never better.

Japan Plants.-*John Feast & Son*, *Baltimore.*-Having received perhaps the best and finest collection of plants from Japan nearly twelve months since, I send you a few specimens of foliage to show you the beauty of some 150 varieties with which I will make you acquainted hereafter, as I have them for sale (already are many propagated) the Retinosporas of which are seven and lovely, if they should prove hardy the acquisition to our collections will be worth mentioning. I send you the Skimmia in bloom.

[Judging from the numerous little fragments sent, many of the plants are new to cultivators, and the whole collection very interesting]

Cabbage for Seed.—*M.*, *Harrisburg*, *Pa.* asks: How are seed of *Early Cabbages* raised? If heads were transplanted in the summer would they seed the same season, or is it necessary to raise a later crop and set out the following Spring, as with late varieties?

[Sow in March or early in April, grow as you would for *cabbage*, striving to get good large heads—cut out those which make poor ones—in Fall plough out a furrow, turn down the Cabbage so that water will run out of the head, plough *on* it another furrow. Next June they will flower and in July cut the seed. That is the way to get *good* Cabbage Seed—though poor heads, stumps, and trash are too often used.]

Winter at Toledo, O.—*M. A. S.* says:—Winters here are severe, and we have to *nurse* many plants that with you grow under neglect. I see the "Tritomas" as plants to be taken up winters. I have had *marked* success in leaving mine out with a good covering of coarse manure.

Gas Lime.—*P. C.*, *Canton*, *Stark Co.*, *O.*—I received the January number of the *Gardener's Monthly*, and I like it very much, and may order the back volumes soon, but I write this time for the purpose of asking your advice, to wit: we have gas works in our town, located one mile and a quarter from my little farm. There is a large quantity of gas lime that can be had for a trifle. I thought of hauling a quantity of this gas lime on a field that I expect to break up for corn. It has not been tried with us. What think you, will it pay, or will the black, stinking lime poison my land? It may have been discussed in your valuable *Monthly* time and again, or other papers, but I have not noticed it. I am in the small fruit business and trucking a little. Have about 2 acres of Strawberries, 1 acre of Grapes, 1 acre of Raspberries, about 100 Pear trees coming on, &c. Will you be kind enough to inform me whether I can use this lime with profit. The soil of the most of my farm, (36 acres), is of a lively gravelly loam, with clay subsoil.

[On grass land we have seen much benefit from the use of gas lime; and at other times. much injury from the same quantity. We believe that it varies very much in quality, and its real value can only be ascertained by special experiment cautiously conducted.]

B., *Baltimore County*, *Md.* says:—I, last fall, planted out a small orchard of Pear trees, and want to cultivate them according to the best system. The ground, last year, was heavily manured and subsoiled to the depth of some fifteen inches, and planted in potatoes. After the potatoes were dug, it was again well ploughed, and the trees planted early.

Now will you tell me—1st. How *you* would proceed if they were your own? 2d. Have you on hand a number of your *Monthly*, in which you explain fully your method of cultivating trees in sod—if so I will send on and get it.

[We should seed the orchard down to grass this Spring. If they were planted originally with the view of cultivating between, and of course set very wide apart, plant another lot so as to make double the number, and give the whole piece up to the trees. Be careful not to let the grass *grow long* about the young trees, or it will take away *the moisture*, which the young trees ought to have. Cut down the grass several times a year, and this will do it. Let your trees branch very low, and they will soon keep the grass down for themselves. Top dress occasionally to maintain the fertility of the soil. This is the whole system in a nut shell. It is not "our" system. When a boy we could not but note the superior health of trees in pastures, and on lawns which were regularly mowed, over those grown in vegetable gardens where the soil was constantly dug about the roots; and all we have since said has been only this and nothing more.]

THE WHITE WILLOW.—By *G. R. K., Pomona, Va.*—The "White Willow" has turned up in our county, I learn, by some one peddling cuttings, or rather engaging them for Spring. He has not been in my corner, and am sorry I cannot give you particulars. I am told he is being encouraged. I have, since I heard of him, searched through all the periodicals saved for many years back for information on the subject, but in vain. I know I have read unfavorable accounts of it somewhere, but I cannot just now bring them up. Will you please let us have in the next issue of the *Monthly*, the whole matter—its adaptability, or otherwise, to hedging—its history, &c. Dr. Warder, in his work on hedges, does not even mention it, I believe.

[As a *hedge* plant the White Willow will not please you. In the West it does well where a "wind break" is of as much value as a hedge.]

TAMARAK—*John G. R. K., Pomona, Virginia*, says:—What do you take the "Tamarak" to be. A friend from Indiana (not well versed in matters of the kind) has been telling me of it in that State as being very abundant, and constituting large "Tamarak Swamps." The trees being very tall and the ground among them bedded with moss—they are an evergreen.

[This is *Larix Americana*, the American Larch, and though of the Coniferous family, not Evergreen.

COTTON CULTURE—By Orange, Judd & Co., New York, comes just in time to be of service—we know nothing to refer to on the matter but it, and we judge from a careful perusal that it is a perfectly reliable Manual of Cotton Culture.

JUDD'S HORTICULTURAL ANNUAL FOR 1868. Last year was the first of this series. As a general summing up of everything new during the past year we do not well see how any progressive Horticulturist can do without it.

TUCKER'S ANNUAL REGISTER OF RURAL AFFAIRS, is another work which bears the same relation to Agriculture as the other Annual does to Horticulture, and of similar usefulness in its particular line.

THE PRAIRIE FARMER ALMANACK is particularly valuable to the trade from having in it one of the most complete lists of nurserymen we have seen.

NEW AND RARE PLANTS.

NEW ANNUALS.—Messrs. Vilmorin thus speak of some new ones:

HERACLEUM PLATYTÆNIUM.—This fine plant (*umbelliferæ*) will prove a valuable acquisition for ornamenting lawns and large gardens, as well for its large floral stem, as for its leaves, which are of an unusual size and elegantly lobate.

The seed requires to be sown as soon as ripe, otherwise it germinates only a year after being planted, it will therefore be preferable to sow it in pots or in the nursery, and transplant when fairly started.

THLADIANTHA DUBIA.—The male plant only of this elegant hardy perennial climber (*Cucurbitaceæ*), which produces large numbers of clusters of fine yellow flowers, was known until lately, and propagated by separation of its roots,

but the recent introduction of the female plant which bears abundantly large fruits of about the size and shape of an egg, will allow all amateurs of fine climbers to cultivate this interesting variety, the more so, as the fruits, when ripe take a deep scarlet shade and are a valuable addition to the fine effect of the whole plant.

CAMPANULA MEDIUM FLORE ROSEO. (*Rose Canterbury Bells*).—This new and very fine variety differs from the Canterbury Bells known until now by the fresh gay and pure *pink* color of its flowers; very valuable novelty.

CEDRONELLA CANA. — Perennial, blooming however the first year if sown in March-April on a hot-bed, but producing its full effect only the second season. It forms a fine bushy plant, about 2 feet high, covered with numerous long compact spikes of a reddish violet or violetish carminate color.

SEDUM SPURIUM COCCINEUM.—Very fine perennial, superior to the old S. spurium by its fine deep rosy flowers, very valuable for borders, succeeding as well in the shade as in the hottest sun.

SILENE PENDULA RUBERRIMA. — Very remarkable variety, it is as vigorous and free blooming as Silene pendula, but its flowers are of a deeper crimson tinge and its stems, leaves and pendunces of a brownish purple color, which extends to the calyx and imparts to the whole plant a very peculiar and striking aspect.

WIGANDIA VIGIERII.—This is one of our best large ornamental leaved plants, equal, if not superior in size to W. Caracasana, from which it is easily distinguished by the silvery tinge of its immense leaves.

Until now plants of this variety have been sold at very high prices; the seed is exceedingly small and 1-10 of an ounce will be sufficient for growing a large number of plants, or for making a good quantity of papers for retailing.

NEW AND RARE FRUITS.

VARIETIES OF CRAB APPLE.—*Frost & Co., Rochester, N. Y.* contribute the following paper, on a subject of which Pomologists generally know little, and will receive their best thanks for their paper:

In your November number we notice a communication from (T. T. S.) Dansville, N. Y., asking for information about the Lady Crab Apple, and also about other varieties of Crab Apples, and for his benefit and also your readers we answer his inquiries.

We presume the name Lady Crab originated with us. This variety we imported from Andre Le Roy of Angers, France, under the name of Malus baccata fructu Nigra, but upon its bearing we found it to be incorrect, and was not a *baccata* or Siberian Crab, but resembled the Lady Apple in shape and mode of bearing its fruit in clusters, but much smaller. We have cut a branch 30 inches in length, on which were 127 Apples. The fruit is about one-half the size of the Lady Apple—is very juicy, and has a delicious vinous flavor. The tree is very hardy and bears abundantly, and in time of ripening would be called a Fall Apple. We gave this variety the name of Lady Crab to distinguish it from the Pomme d' Api, the genuine Lady Apple, which is so well known as to need no description, (but it is not a Crab).

The Api Noir, or Black Lady Apple, resembles the common Lady Apple in size and shape, differing only in color, which is nearly black. This is erroneously called sometimes, the Black Crab, or Nigra.

The Tetofsky, Hyslop and Hewes' Virginia, are generally called Crabs, but they are not. The Tetofsky has been sent out by some Western nurserymen under the name of Russian Crab.

The Hewes' Virginia is a small rusty Apple, sometimes with a dull cheek, and much sought for in Southern Ohio and Western Virginia, for the making of cider. It is also quite hardy.

The Hyslop is a trifle larger than the Lady Apple, more oblong and of a dark, dull red color. It is much sought for in the northwest on account of its hardiness, and succeeds well even north of St. Paul, Minnesota.

The Siberian Crab Apples are a class by themselves, and are called *baccata*, and all of them are very desirable either as fruit or ornamental trees, and especially as ornamental trees, their cultivation has been much neglected. The great beauty consists in the foliage, the beautiful blossoms in

Spring and the handsome fruit in early Autumn. Most of these varieties are very valuable on account of hardiness, succeeding in the extreme north where other sorts cannot be grown, and producing fruit which is highly esteemed as a luxury either as a Preserve or Crab Apple Jelly. We give the following list as the most desirable, and all are quite distinct:—Large Red Crab, Small Red Crab, Large Yellow Crab, Small Yellow Crab, and the Transcendent.

The Currant Crab, sometimes called the Cherry, has small fruit about the size of a well-grown currant, and bears its fruit on a stem like the currant—it is only valuable as an ornamental tree. When in blossom it is very beautiful. Malus baccata fructu Striata, or Striped Siberian Crab is quite distinct. The fructu maxima, or large fruited Crab, is of good size but not so large as the Transcendent.

The Montreal Beauty, and the Foxley Crabs, are cultivated by some, but are not generally disseminated.

The double flowering Apple might be called a crab, but it is not a Siberian or baccata. It is exceedingly ornamental, and is much admired for its showy blossoms—it is frequently sent out under the names of Pyrus and Malus spectabilis.

Probably the largest, handsomest and most valuable of all the crabs is the Transcendent. We do not know its origin, but Wm. R. Prince of Flushing, Long Island, claims to have discovered it, and to have christened it, and to have first sent it out under this name. We think some nurserymen have sent the Transcendent Crab out under the name of Transparent Crab, and we are not aware there is such a variety.

The Transcendent is a great bearer and very hardy. We saw this in full bearing during the summer of 1866 in the grounds of W. M. Harrison, Minneapolis, Minnesota, on trees only three years planted. Mr. Harrison informed us this was the only sort he could really call a perfect success with him, where the mercury frequently went from 35 to 45 degrees below Zero. He informed us he had procured nearly 1000 trees from the Genesee Valley Nurseries, Rochester, N. Y., during the past six years, and distributed there amongst his neighbors in Minnesota, all of which had done well.

A variety called the Soulard,—We do not know its origin, nor if it is Siberian—but it is being called for as such. It is a winter variety and keeps well until May and June. It is green when picked in the Autumn, but turns to a beautiful yellow during Winter. We cannot see how the Siberian Crab, or any variety of Autumn Apples, that can be made valuable for making cider, on account of the temperature being too warm at time of ripening, but would be desirable for making vinegar.

Amelia Peach—by *P. J. Berckmans, Augusta, Georgia.*—While upon the subject of Peaches I must re-vindicate the name of *Amelia* as belonging by priority to a Southern Peach. I notice the description which Mr. Elliott gives of Mr. Husmann's Seedling Peach, and which, as before stated, corresponds with a reproduction of the Indian type, of which the *Columbia* is the standing variety for its freestone section. I claim the name *Amelia* for a Peach originated many years ago by Mr. Stroman of Orangeburg District, South Carolina, and known in the trade by the former name. Not disputing the right of any originator to name his seedling fruits, I merely mention the fact of there being already a fruit of the same name known and differing very extensively, and which will tend to create confusion.

The description of the Southern Amelia is:

Large to very large, (9 to 10 inches circumference) oblong, with a blunt protuberance; skin, creamy white, most delicately washed with crimson. Flesh white, exceedingly juicy, melting, vinous and of the highest flavor, freestone. Ripens (here) from July 1st to July 5th. Flowers small, glands reniform. A magnificent fruit in every respect, too tender to stand carriage to distant markets, but as a fruit for home consumption it stands at the head of the list of early Peaches, and equals the best variety of any season.

Synonyms—Stroman's Carolina, Sally's Peach, Orangeburg Peach.

As regards Mr. Husmann's Seedling Peach, I would remark that there are extensive orchards here planted with *seedlings*, every one being a Columbia, and differing from it only, where difference exist, in being a little later in maturity, thereby giving *true* Columbia Peaches from July 15th to the beginning of September. In fact there is no difficulty in securing *uniformity of fruit*, by planting the seeds of the Columbia Peach.

If a description of the best Southern Peaches should be acceptable to the readers of the *Monthly*, I will, with your permission, give a few notes in a future number.

[Our readers will feel much indebted to Mr. Berckmans for the proposed favor.]

DOMESTIC INTELLIGENCE.

Quassia for Insects.—In the report of that very useful Horticultural Society Society, Alton (Ills.) just received, Mr. G. G. Mygatt, Richmond, Ills., has had great success in killing black and green aphis in cherries, by using Quassia; he says:

"I made a decoction of the wood of Quassia, which is found in all druggist shops, say four ounces of Quassia to a pail of water; boil 15 or 20 minutes.

I used a large dish-pan with handles,—filled it about half full, when cold. An assistant carried the pan while I carefully bent the infested part over the edge of the pan, and gave it a few lateral motions; and shook it to prevent too much waste of the decoction.

Col. Bainbridge of De Soto, Mo., has a model apple orchard of over 4000 trees, which is now six years planted, and are bearing considerable fruit. He has already sent to market, this season, quite a lot of Keswick Codlin apples. His Early Harvest and Red Astrachan will soon be ready to pick. He has kept the orchard under constant cultivation, which accounts for the fine growth of his trees. He has suffered considerably by the depredations of the borer, but says he has found an effectual remedy for both the apple and peach borer, which is, to make a thick whitewash and apply to the body of his trees in June. He says, a thick coat of this will keep off the miller, and is, besides, an excellent fertilizer. *—Rural World.*

HORTICULTURAL NOTICES.

THE VINELAND AGRICULTURAL AND HORTICULTURAL SOCIETY.

The following report of the February meeting is from the *Vineland Independent:*

Philip Snyder Esq., President in the chair.

The event of the evening was the valuable extemporaneous remarks of Thomas Meehan, editor of the *Gardener's Monthly*, on the subject of "The theory and practice of fruit culture." It was as the learned lecturer said, a *fruit talk*, and judging from the profound attention paid by the audience, just such a talk as Vineland wanted. Mr. Meehan, said that persons often failed from a miscalculation in planting, they counted so many berries to a plant, so many plants to an acre, and fancied the one multiplied by the other gave the sum total product; but such too often resulted otherwise when measured by the quart.

Dwarf Pears were equally miscalculated; the condition of the sub-soil often disappointing the brightest hopes. In regard also to other fruits—the fact was patent that any man with nothing to guide him but a theory, never could grow, with any certainty, any of our fruits. Theory says don't whitewash trees because it closes the pores, experience shows that the bark has no pores to close, dead bark, and everything dead about a live tree is better removed—whitewashing is beneficial.

Theory is useful, but not always a safe guide, but the knowledge of principles is of the utmost importance to show the consistency of contradictions; as for instance, a child blows the tips of its fingers to make them warm, at the same time his father may be blowing a cup of coffee to make it cool, and observes a plain contradiction, but when principles are explained to him, its all right. He sees that an equilization of temperature is the object in both cases.

It is foolish to copy any pattern too closely; our forefathers farmed, and in their way, were pretty good farmers; but no one now could hope to succeed if his only aim was to "follow suit"—he would be like the crockery merchant, who wishing to secure a particular pattern, sent a cracked plate with his order, and got back a set of crockery, all cracked, *according to pattern.*

All extremes are evils; the man of science, (and he understood by science, book learning) looked at the practician only as a common plodder, while the practical man looked upon the other with contempt.

On the subject of new principles or discoveries in fruit culture, he noticed the opinions that existed as to a law of progression of primaries; for instance, a mineral phosphate was not as well adapted to nourish plants, as the same elements that have been prepared by vegetable organization—vegetable decay. The elements are few, but the forms are legion ; and all our best results arise from a practical knowledge of the way to produce the desired changes. You cannot very easily be deceived in the taste of mutton and beef, and yet these two forms of animal life from which we derive these differing meats, may both be fed under exactly the same conditions of growth, while the same feedman cannot go directly to the soil and abstract his own nourishment therefrom, (is the clay eating man of the South then a myth?—REP.) but receives it through the intermediation of animal and vegetable forms of life ; and by a similar law, though not generally acknowledged, animal and vegetable life is sustained.

It is important to know that the roots of plants grow in winter, no matter how frozen the soil about the roots, the internal or latent heat of the rootlet is sufficient to carry on absorption and thus save the tree, or shrub from death by evaporation. That evaporation goes on actively in winter is proven by the fact that many fall planted trees die from this cause before the equilibrium of absorption has been set up by the roots. The character of roots are two-fold, the upper or fine roots which annually die, are the feeding roots ; the others are adapted to sustain the plant itself, and maintain it over dry seasons, when the feeding roots are unable to feed for a crop.

PRUNING.—This operation weakens vitality, especially summer pruning,and may be illustrated by the osier willow—for a willow left unpruned,in a given number of years, would be some five or six times more bulky than one continually cut for its branches. It is, however, a matter of skill with the fruit grower, often to reduce the vitality of a tree in order to increase its produce in fruit.

The law of lost force was admirably illustrated by the vine, which, failing to find some kindly support, wastes its vital force in vain efforts to comply with its climbing habit. The parasitic enemies of plants were shown to attack them in a healthy as well as a diseased condition, and it was as necessary to destroy mildewed leaves, on their first appearance, as any other parasite, in order, and for the same reason, to prevent the perfecting of its seed.

The rule generally recognized now in regard to foreign and home strawberries was, to put the former, of which the Triomphe de Gand was a specimen, into a heavy soil, and give them high cultivation ; while American varieties, such as the Agriculturist and the Wilson, delight in a light soil and bed culture.

The Blackberry is remarkable for its power of adaptation to soils. The Lawton prefers high ground.

Raspberries should not be planted deeper than they grew, though the Gooseberry and Currant might. Gooseberries are more apt to mildew here than farther North, in cool latitudes and on high ground.

The fire blight on the pear is considered to arise from a parasitic fungus which germinates on the bark of the tree, which, growing round the stem, effectually girdles the tree, and practically destroys it.

The leaf blight is a far more dangerous enemy. It is a virus drawn, most probably through the roots, and on exposure to the atmosphere in the leaves, becomes like little germinated black spots. What we find on the leaves in July is the result we speak of.

The questions to which Mr. Meehan's lecture gave rise were of the most interesting character, and when it is taken into consideration how much practical knowledge was thereby elicited from the able lecturer, it will be readily acceded that instruction from the platform, by such observant students of nature, cannot fail at once to encourage Vinelanders, and raise the agricultural status of Vineland.

The notices of the evening consisted of a reminder to members about the wish of the Society, next Saturday evening, to examine fruit boxes and crates, "large and small, good, bad and indifferent," and an intimation that, at next weekly meeting, some new Tomato seeds will be donated to members, the gift of J. D. Brown, of Clarkesboro, N. J.

A letter was read from Messrs Holmes and Voorhees, strawberry salesmen in New York, which made good, some important considerations on the subject of the disposal of this years' crop of berries. That from notes 1st, our berries in 1867 were ten days late to market ; 2nd, the business was new to many of the growers ; 3rd, the crop was unusually large ; yet Messrs. Holmes and Vorhees netted their regular shipper, twelve cents per quart, all through the season. The inference these gentlemen draw is that if our 1868 season is early and abundant and properly shipped, the proposed "seven cent" rate is far too low an estimate.

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HINTS FOR MAY.

FLOWER GARDEN AND PLEASURE GROUND.

In a late number, Mr. H. W. Sargent gave our readers a view of Levens Hall, which is famous for its topiary work. *Topium* is the ancient latin name for an arbor or bower. Cicero uses *Topiarium* to signify a picture made up of shrubs and trees ; and "topiary work" has been used by our modern authors to signify the art of cutting trees and bushes into fancy shapes and forms. The past age carried the rage for these clipped trees to such an extravagant extent, that with the revival of a natural taste in landscape gardening during the last generation, the topiary art fell into discredit ; but in spite of our love for natural beauty, we do think more of this sort of work might be introduced without much ground for true taste to criticise severely. We trim box edgings, as we, members of the male persuasion, trim our beards or whiskers, and never think they look any the worse for it ; and during the few past years, the passion for clipped evergreen trees has spread enormously. Pear trees trained *espalier* or fence fashion, always please ; and so of many other ways of training things. But, says our objecting friend, this is not strictly within the topiary art as it is generally understood. We do not clip our beards or whiskers into representations of birds, mice, or any such living things, as these tree artists do, which is true ; yet it shows that the artificial is appreciated, the limit to it being the only subject of dispute.

For ourselves, we are in the habit of believing in facts as we find them. We have noted that these fancifully trimmed trees almost always are admired when the representation is good. A pair of vases made out of box bushes, or any similar piece of art, arrests the attention of the most rigid purist in the more natural schools of taste. If the admirer be a lady, she almost always praises the work, and as what a lady likes or dislikes is instinctive and natural, we may be sure there is real substance in such things, and we venture to defend a lady's taste in gardening affairs against all objectors. So, good friend, the *Monthly* will allow you to shear a little, but not shear much,—here and there—but not all over the place ; and be sure you have not to do as the boy who sketched a figure and then had to write beneath, "this is the drawing of a horse." If you undertake to make a bird or beast, let it speak for itself. It must be a living likeness, or we shall not be pleased. Now is the time to shear these things into shape. In our climate vegetation is apt to grow rank from the top of the tree or bush, and so weaken the side shoots. It is best, therefore, not to cut the sides any more than one can help, but keep clipping away from the top whenever growth is made. This principle applies also to the treatment of hedges. As to the more practical matters pertaining to this department, we may say, that for good flowers fresh soil is very important. Things seldom do well two years running, in the same place. Have a care that the roots of neighboring trees do not get into the bed ; they rob it and dry it, and the flowers dwindle and die. If beds are near trees, go round the bed once a year with a spade and cut off all the roots that may have strayed into the bed. This is very important in beds of evergreen shrubs, like *Mahonias*, *Euonymus*, *Rhododendrons*, which like shade, but not dry, impoverished soil.

Leaf mould is good for flowers if two or three years old, and very much decayed ; when but half rotten it is an injury. Rotten sod is the best soil for flowers ; and cow manure, which has lain two years to rot, the best fertilizer. Where rotten sod is not easily obtained, the edging parings of walks may be preserved in a heap for flower purposes.

In planting out flowers, don't take them at once from the hot-house to the open ground, set the pots out for a few days in a cold frame with plenty of air, or under a tree in a sheltered place. Before turning them out of pots, water ; and when set in the earth, press the soil very hard about the flower roots. If the ground be dry, the earth cannot be pressed too hard.

Don't make the beds very high, or the rains in summer will run off too rapidly. After smoothing the surface peg down the plants as much as possible, so as to cover the surface soon. The plants also push out side shoots easier. Where small twigs can be had, split and double them like hair pins, for pegging down ; where these are not at hand, small pieces of bast mat or twine, doubled and dibbled in the earth by the ends, make very fine pegs.

In this climate, hot-house plants often make noble bedders. The Chinese Rose, Hibiscus, is a first-class thing, making a gorgeous show all summer. The Geranium, also, is getting immensely popular. The tree Carnation is also in much request. The Madagascar Periwinkle, rose and white, is also now often seen in beds and masses.

Climbing plants grow faster on trellis than if left to themselves ; stick them in as soon as the climbers are set out.

Deciduous trees can be safely transplanted after the leaves have pushed, and up to the first of June ; but the new leaves must be taken off, and the young shoots shortened. In a few weeks they will push out a new crop of leaves. According to "natural laws," as laid down in the books, it would injure the trees very much ; but, after a ten year's observation of the facts, we do not find it hurts the vitality of the trees very much, while few ever die so treated. Evergreens seem to do better in May than in any other spring month. Of the newer evergreens, Thujopsis borealis, Cupressus Lawsoniana, Libocedrus decurrens, Thuja ericoides, are really good additions to our list.

Tuberoses, Gladiolus, Tigridias, Dahlias, and other bulbous things which cannot be put out till the ground gets warm, ought not to be kept out of the earth any longer than necessary. It was once supposed they thrive best in poor soil—an error : they love rich food.

Mow lawns very early the first mowing ; or at every subsequent mowing, the lawn will look brown : a thin sprinkling of salt is good for the lawn, just enough salt to see the grains on the surface about a quarter of an inch apart. An over-dose will destroy the grass. Frequent rolling is one of the best ways to get a good close sod. When coarse weeds get in the lawn, hand weeding is the best remedy.

FRUIT GARDEN.

We think we have the best soil and climate for fruit culture in the world, yet probably get less returns for the money invested than any people on earth, simply because we do not fully appreciate *labor* as an essential element of success.—The amount of practical skill and incessant care given to fruit culture in Europe before the innumerable fruit enemies are overcome, would astonish Americans. The writer of this has spent, every year, *months* of time when a boy, in simply training plums, apricots, cherries, pears, and peaches to walls built for their protection ; in capturing moths, wasps and insects, during summer ; in keeping birds from the buds ; in pinching back and directing the course of summer shoots, and, in innumerable ways, watching the progress and maturity of fruits which would have "come to nothing" but for such care. Here we "stick in a tree," and if, after such a herculean effort, we do not get Titanic results, we swear at Pomona, and pluck her image from our hearts. We do not care how much money we pay for a "new variety" of fruit, but think nature uses us badly if she asks for a dime's worth of labor to care for it. It is curious to read the learned essays in the "secular" papers about the decline of fruit growing. "Elements are exhausted," "systems are wrong," "varieties run out," and so on. "The soil and climate once grew fruit well here, but it will do so no more." The truth is, in new localities insects and fungi, inimical to fruit, do not exist ; cannot until their natural food first comes. After a few years they find out your orchards ; and to succeed after that you must *fight them.*—Insects and blights reproduce themselves, and we must gather them together and destroy them before they transcend their adolescent state. This is the only remedy. Washes, oils, preparations, &c., do much good ; but much more may be done by *manual labor* than is generally supposed. In all large fruit gardens, it would pay well to have a man especially devoted to insects and fungi destruction, as well as another to look especially after the making of manure.

Talking of prices for new fruits reminds us how many new strawbreries will soon tremble under their first introductions this season ; as well they may, considering the fate of all the new ones of the past score of years or so. Because we make light of the pretensions of so many of the new aspirants for popular applause, we are sometimes charged with being opposed to experimenting. No such thing ; but we are opposed to paying high prices annually for trash ; and, worse still, throwing away precious time in testing kinds, only to record with each returning summer that the best strawberries, taking all in all, are still "Albany Seedling," "Triomphe de Gand," and "Hovey's Seedling." As for trying, good friends, keep on. There is no department of fruit culture more interesting than that of raising seedlings ; but only do not, when you have the "best you ever saw," imagine that you have seen all the best. This is where the trouble comes in.

To get good fruit you must manure well, and we are often asked whether *this* is not best, or *that* is not better, or something else best of all. But, really, any fertilizing matter is good. Old decayed stable manure satisfies us for everything ; but do not forget what we have often said about digging amongst the roots. *Don't do it.* Surface manuring is daily adding to its advocates ; but in particular amongst fruit growers ; and no fruit, probably, blesses the surface manurer more heartfeltedly than the Raspberry. Put a few inches of rich, rotten stable manure about your Philadelphias, and you will not think them much inferior to the reputable old kinds like Brinckle's Orange, Antwerp, &c.—at least we don't.

As to general May rules, we may say, look sharp after insects. Last year we introduced petroleum as an insect destroyer. It is the most valuable discovery of modern times to the fruit grower. In over-doses it is like tobacco, sulphur and others, fatal to the life of the trees. We have found that just enough to make a barely purple tinge on the water used for syringing is effectual in destroying most insects. If one dose does not do, try another the next day. Better use a light dose twice, than one heavy one, which kills plant and insects both.

VEGETABLE GARDEN.

Surface manuring, so valuable for fruits, and herbs grown for their grain, has not been found so advantageous for those crops which require great succulence to give them value. Hence, for Cabbage, Celery, and such, it is better to dig in the manure, and keep the surface soil as freely stirred and deeply hoed as you please.

There has been quite a stir the past few years in new vegetables, and this year will be an important one on the fate of many new kinds. Peas, potatoes and tomatoes are particularly interested in this season's results, for many will, no doubt, sink hereafter into oblivion, or something worse. In testing things, however, let our friends remember that the last is often first, and the first last. We often read that that or this is good for nothing. It was planted a week sooner, and yet come in afterwards. Vegetables are not like horses, where the odds of time are in favor of winning. A plant early set often gets stunted and has to rest like the hare in Æsop's fable, and the really and truly slow-poking tortoise, under such circumstances, may go ahead and win. Let all your plants start fair together.

Cabbage, Cauliflower, and Brocoli are now set out for fall crops, and Endive sown for winter salad. Lettuce, also, for summer and fall use. This, however, must be sown in very rich soil, and in a partially shaded situation, or it will go to seed. Peas, Beans, and other crops, should be sowed every two weeks. They do much better than when a large crop is sown at one time, and then have too many on at one time to waste.

Melons, Cucumbers, Corn, Okra, Squash, Beans, Sweet Potatoes, Lima Beans, Pepper, Egg plants, Tomatoes, and other tender vegetables that do not do well till the sun gets high, and the ground warm, should go into the soil without delay.

Bean poles should be set before the beans are planted ; and near cities where they are comparatively high priced, their ends should be charred. This will make them last some years.

Many now find it pays to grow plants especially for poles. A waste piece of ground may be set with Willows, Paulownias, Ailanthus, or any fast growing trees which can be cut every second year.

GREENHOUSE.

About this time, in this latitude, we commence putting out tubs and large pots kept under cover through winter, and used in summer for decoration of the grounds. Oranges, Lemons, Pomegranates, Crape myrtles, Pittosporums, Agaves, Aloes, and Sago palms are particularly employed for this purpose. Many are very much troubled about re-potting them ; but, unless very healthy, they are often injured by too much potting. It is safest to put a few inches of well decayed cow manure on the surface, and the watering will carry the nutriment down to the roots.

COMMUNICATIONS.

THE LAKES OF KILLARNEY.

BY P. B., ROCHESTER, N. Y.

The interesting "Foreign Reminiscences" of Mr. Sargent in your February number, bring to mind the recollection of a delightful day I spent at Killarney, and on and around the Lakes in the month of August last. I arrived there at nine o'clock in the evening, having left Dublin at one p. m. the same day. Took lodgings at the Railway Hotel; a large, well-kept house, with *very few guests*. The Railway Company had built this house, and at the same time a large elegant building for a "Turkish Bath." Both this "Bath" and the hotel are magnificent failures, financially. I was told that the Bath did not earn enough to pay for sweeping the dust out of it. But between the Hotel and the Bath lay a charming garden of about an acre, a lawn ornamented with the most brilliant of flower beds and pretty bits of rock-work.

Many of our watering place hotels might benefit by this example—I mean the garden. After supper I, in company with a fellow traveler, started out to see Killarney by gaslight, or rather starlight; for I think gas is one of the modern improvements that has not reached the beautiful Killarney. Our progress, however, was soon arrested—the gates were locked, and we were only permitted to hear the dogs of Killarney bark in the distance.

You know that was the locality of the Fenian raid the spring before, and many amusing incidents of that raid were told us. The Railway Hotel where we put up was the fort in which all the affrighted citizens, with their household goods, fled for safety on the rumored approach of the Fenian army—which never came.

Early next morning after my arrival I procured a comfortable "Irish jaunting car," a luxury only to be enjoyed in Ireland, with a good humored, intelligent driver, and started for a ten mile drive up the banks of the Lakes. Our first halt was at the famous ruins of Mucross Abbey, alluded to by Mr. Sargent. The ruins here are beautiful as ruins can be, and brought to my mind a saddened reflection upon the ancient history and historical names of that unhappy country. The grand old yew tree standing in the court, like a monarch, in full vigor, in the midst of decay, awakened a more agreeable emotion. I resumed my seat on the "jaunting car," and rattled away over the smoothest of drives through the splendid well kept estate of the Hon. W. Herbert, a gentleman for whom everybody seemed to have a good word. For miles we went through this estate, admiring the road which was as smooth as the drives of the Central Park—the noble old trees scattered over the park like openings—the variety and richness of the wild looking plantations that skirted the drive, filled with the brilliant purple heaths in full bloom. Here we noted great groups of Yuccas; then Gynerium or Pampas Grass almost by the acre, and looking fully naturalized: oak trees covered thirty or forty feet high, with a dense growth of small ferns. All the new and rare Evergreens were met by turns: Cryptomerias, Auracarias, Cupressus Lawsonianas, Wellingtonias, &c., &c.; many of them of large size and perfect form. I can safely say, that a more interesting drive I have never enjoyed than this.

Having arrived at our destination, we were met, as previously arranged, by a boat which was to convey me back to Killarney, through the Lakes. This was a merry and charming trip. The scenery of these lakes is a strange mixture—something like the Irish character. Here high, rugged, wild looking mountains, huge rocks, apparently blocking up our channel, with a rapid, gurgling current; then we emerge into a placid little lake, with bits of the greenest and smoothest of lawns, and quaint cottages on its margin.

The boats of the various rival hotels were passing us to and fro quickly, and a constant fire of humorous raillery was kept up between them, much to the amusement of their passengers.—These boatmen complained bitterly of "dull times." The Fenian excitement or something else had greatly diminished the number of visitors to Killarney; but the light hearted fellows, with all their hardships, were brimful of merriment.

That evening I took leave of Killarney, bound for Cork.

SOME WINTER FAVORITES—No. 1.

BY J. C. JOHNSTON.

In describing a certain number of specialties, our favorites for winter decoration, we must state before proceeding further, that all these, singly and in the aggregate, owe much to their surroundings.

Fine flowers, however well grown and bloomed they may be, brought together without reference to contrast and judicious arrangement, yield a very meagre satisfaction to us. Formal rows of pots, ranged side by side like bottles on the shelf of an apothecary, are excusable only in the greenhouse of a dealer. With so many climbing and trailing plants at command, ready to do our bidding *on wire*, there is no excuse for huddling a lot of shrubs and plants together, as they are too often seen in the so-called conservatories of amateurs.

If we can't have all of nature under glass, let us have the largest instalment possible, or the best possible imitations. Nature has adopted every imaginable arrangement of growth, except stiff lines. Even the fantastic, in her hands, is never ungraceful. No wild vine festoons the solitary forest tree without yielding a study and a solace to the first true hearted son or daughter of Dame Nature that chances to pause and linger under its grateful shade.

Do we strive to imitate this happy knack of Nature, in its graceful combinations of arrangement? Certainly not; and yet it is both possible and practicable.

Difficult? Well—that depends. If you have a fair modicum of good taste, some judgment, and a little practical experience, (your own and not by deputy), the happy knack alluded to is full of encouraging example. But if you have to depend on the manipulations of a hired deputy, we are afraid your wooing of the dame aforesaid will not prosper much. Any measure of success, however trifling it may appear, is a move in the right direction; and a few of these moves will go a long way in correcting the objectionable formality of ordinary greenhouses.

The great obstacle to overcome is in the structures themselves. The ordinary "lean-to," especially if against a dwelling house, is usually a long, narrow affair,—about the last place under the sun Nature would be likely to select in which to do herself the scantiest measure of justice. And if accessible from the parlors,—the most appropriate manner of using a conservatory,—(and what a charming addition it makes to a happy home in winter,) why is it so little improvement has been adopted with us, in the original planning or skilful alteration of these structures?

It will not be out of place here to outline, very briefly, how we improved our "lean to," otherwise some of the hints we propose to offer hereafter might seem lacking in several important items of information. First of all, we took it to pieces—demolished it in toto—saving the glass of course. On no other hypothesis, save the cheapness of lumber, could we account for the quantity of timber in that greenhouse. It was prodigious. The "lean to" rose again an entire new creation. Length as before, but considerably wider—a great desideratum. At one end we added an octagonal structure, which, intruding as it were on that angle of the lean-to, produced the effect, *internally*, of throwing both houses into one. Seen through the glass door (opening from the parlor on a flight of steps), at the height of the flowering season (Dec. to April), it would not be easy to suggest, for the same space and at the same moderate cost, a more effective or satisfactory arrangement.

The octagon, being considerably higher than the "lean-to," with a circular roof or dome tapering to a point, is a great improvement externally as well as internally. The height thus gained we turn to account, by fixing in the centre a substantial iron and wire circular trellis, some 10 feet high, up which is trained Noisette Roses, in combination with slender growing climbers, that neither injure nor are injured by the more sturdy roses. This trellis stands in the middle of a bed, raised some ten inches above the gravel walk which surrounds it.

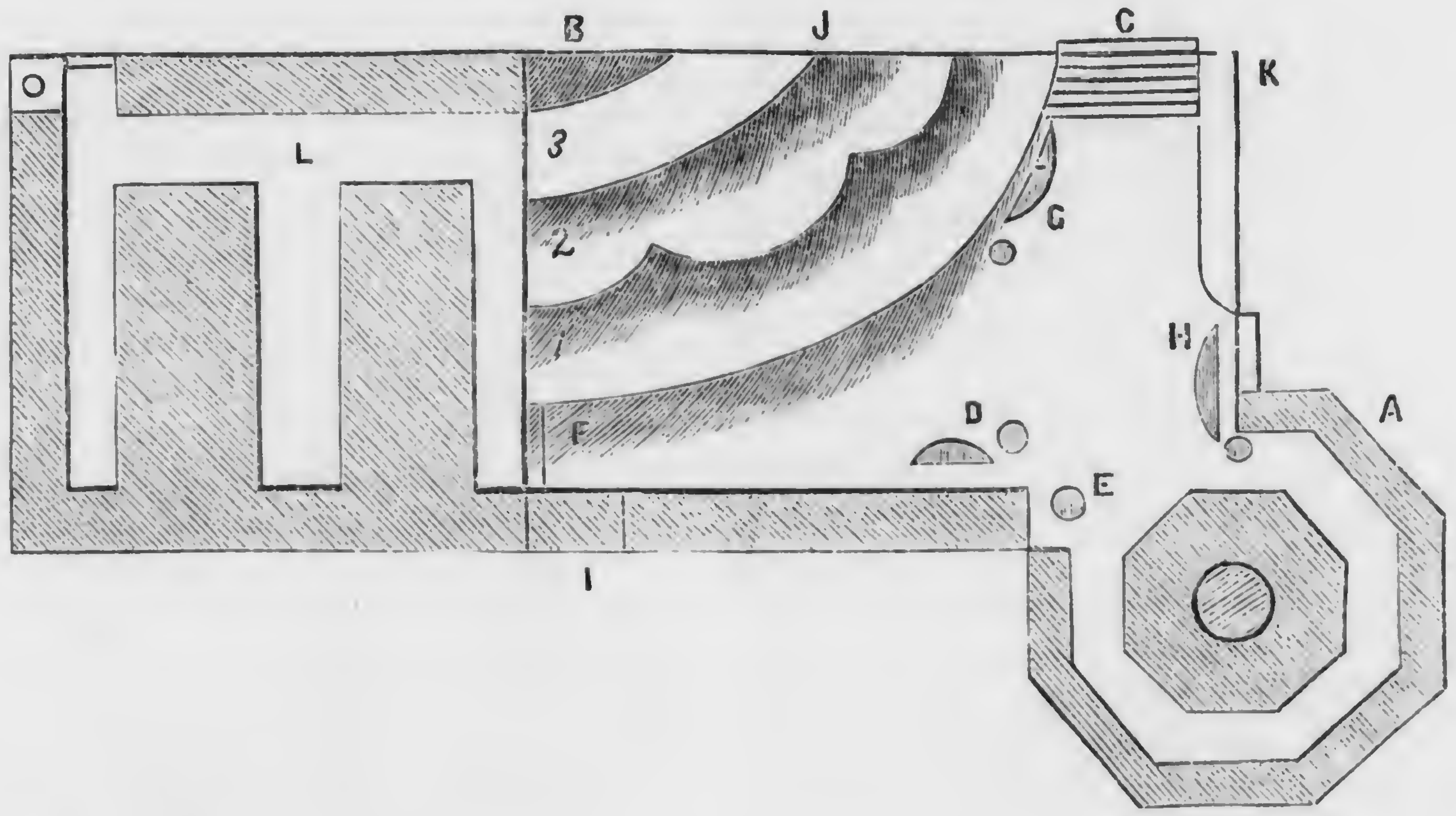
The margins of this bed may be called a thick undergrowth of greenness, which is the effect aimed at, and produced by a liberal planting of Saxifragas, Vinca, Lobelia speciosa, &c. Out of this green fringe ascends the showy bloom of various colored Crocus, the modest face of the Snowdrop, the charming Cyclamen with its rich tip of magenta, Narcissus, Tulips and Primulas (these last grown in small pots, for the purpose, and carefully plunged).

Behind this margin are Geraniums, some growing in the bed, for the sake of a more robust foliage; others in pots, so as to ensure a succession of bloom. One or two stately fellows, of almost sub-shrubby habit, are trained up the trellis so as to hide entirely the bare portion of the roses. To our surprise, a plant of Irisene, now 3 feet high, contributes a rich effect in combination with these same Geraniums—the crimson and maroon shaded leaves contrasting finely with the entanglement of green. As we now write, (Feb.

7th,) from the centre trellis, hundreds of the most graceful sprays and fairy wreaths droop downwards, shoot forward at right angles, or upwards—as if in haste to greet the sun—with scores of lovely carmine blossoms, modestly claiming permission to expand in company with gorgeous blooms, here and there, of Noisette America. It is Maurandia Barclayana, the very best slender climber for the purpose to which it is here applied.

One narrow shelf directly above, and serving to disguise the hot-water pipes, holding two rows of pots, completes the circle of the octagon and its embellishment, in addition to the centre beds, which is of course the main object. This bed measures only 7 ft. across; the gravel walk 2 ft.; the shelf 16 in., so that the house itself is only a small affair (large as it may appear in type). But it answers our purpose thoroughly, and the possession of just such an one would gladden the hearts of many an amateur plant grower.

It will be perceived that the junction of the octagon and the oblong house gives the effect of a much larger *open space* in the latter, which is still further increased by the shape of the stage F. (Our explanation requires, however, a diagram, in adding which it must be understood as not drawn to any scale.)



On this open space are placed at D, E, G and H wire stands and pyramids, of different shape, size and height, filled with plants growing in foundations of moss (similar to hanging baskets). One of these is used as a medium in which to plunge pots of plants in bloom; and all have Ivies, Vincas and a variety of creepers, trained in diverse fashion or left to ramble "at their own sweet will." Between F and D, and between E and H, hanging baskets are suspended from the roof, which associate well with the stands and pyramids below.

Before studying the effect produced by the arrangement just described, it will be necessary to understand the main stage for floral display, comprised in the angle between B, C and F. Detesting the formal plan of shelves, our aim was to obtain the effect of a *sloping bank*. We, therefore, divided the stage into three divisions, (call them shelves, if you please, inasmuch as they do rise one above each other.) No. 1 is 2 feet high, with breadth for 4 or 5 pots. No. 2 is 1 foot, 3 inches higher than No. 1, with a bold scalloped front, which admits high plants to stand on No. 1, within the bays or indents. No. 3 is 1 foot, 4 inches higher than No. 2. The dark space behind is an opening with a ladder below, giving access to water, removals, &c., from above.

We commence the front of No. 1 with low growing thing, such as Primulas, Hyacinths, Cinerarias, Cupheas, Ardisia crenulata, &c., bringing up the rear with moderate sized plants of Geraniums, Daphnes, Gesnerias, low-growing Camellias, Callas, &c., so arranged that the plants in the rear shall reach up to the level of No. 2, or, rather, a little above, so as to partly hide the first row of pots on that next division of the stage.

The same principle of arrangement as adopted on No. 2, using at the rear still higher and bolder specimens, especially of Geraniums, with large, high colored trusses. Mixed with these are such Fuchsias as we can cultivate so as to bloom in winter, which some do, and many won't, coax them as you may.

No. 3 is devoted to Camellias, (succeeded by Rhododendrons) with here and there a Golden Arborvitæ, and several veteran specimens of Scarlet Geraniums—the most indefatigable of bloomers. An Aucuba japonica, at the rear of 1 and 2, is very effective, the leaves of which are so beautifully blotched with gold.

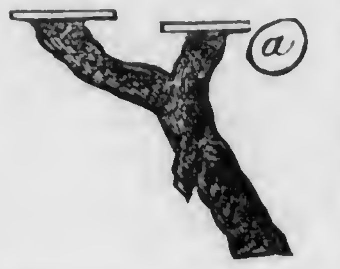
The front of the oblong house is occupied by one shelf, I, which is 3 feet wide. It has a platform on the left, raised 9 inches, to counteract somewhat the effect of a dead level. On this shelf is displayed some of the most showy and attractive plants in full flower, being most conspicuous, seen through the glass door (at C,) from the parlor, the descent from which into the conservatory is by a flight of 6 steps.

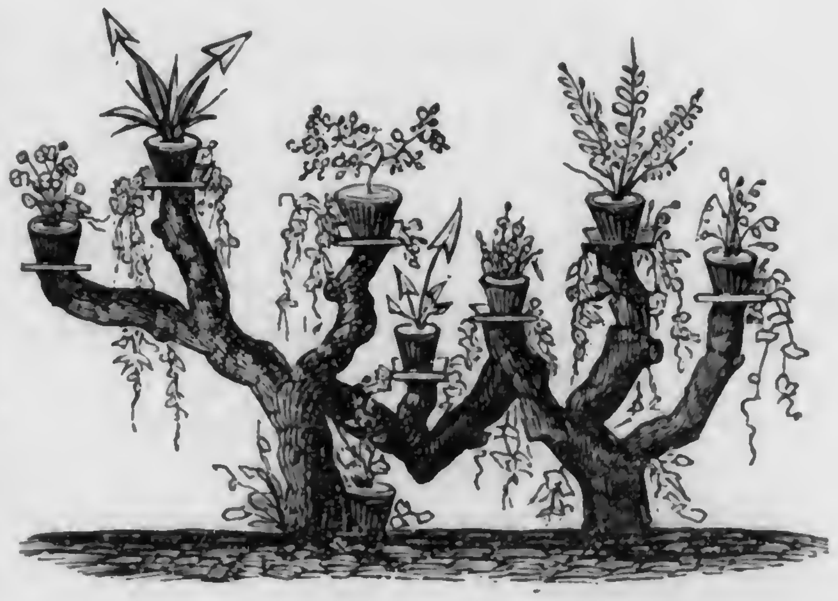
At the foot of these steps, next the stage, there is a circular wire stand, against which a plant of Tacsonia manicata is trained. Two years ago, it was planted in a very narrow patch of well-prepared soil, on the level of the floor. From the top of the circular stand it is then carried on wires to the roof, over the glass door at C, along the rear of the house to B, also across the centre from J towards F. The luxuriance and beauty of this most elegant climber leaves nothing to be desired. It is similar to Passion flower, color a very brilliant scarlet. With us it commences blooming in Dec'r; has now, Feb. 18th, about 20 blooms daily, and, from the number of buds, formed and forming, will, probably, continue in flower some time longer. It is a very manageable climber, slender stemmed, not too dense of foliage, so that it can be trained under the roof of a conservatory without injury to the plants below.

A peculiar feature of our winter decoration remains to be told, but is not easily described. On the left of the stair, opening from the parlor, there is a shelf, K, on a level with the top of the door opening outwards into the garden, and continued over it up to the angle of the octagon. This shelf is a trifle over 6 feet above the floor of the conservatory; on the level of the parlor it is only about 3 feet higher. It is, of course, well stocked with shrubs and plants in bloom.

The door opening outwards is never used in the winter—access by the gardener, for ordinary duties, is obtained through an inner door opening from the basement at M. Against that closed door, and continued up to the steps, is placed a massive kind of rustic work, constructed of bent and crooked limbs of apple trees, deprived of their bark.

These are so arranged as to project outwards from beneath the above described shelf, the point at *a* just clearing it. The projecting ends are so arranged and cut at various heights, as to admit of small cups or platforms being securely fastened on them. On these little stands are placed handsome specimens of plants in bloom. At the base of the rustic work, Ivy or variegated Vinca is trained around and upwards; whilst, from the little platforms, or from the surface of the larger pots, a variety of trailing plants, in small pots, hung downwards, and, to some extent, drooping over and covering the sides of the large pots, and adding much to the pleasing effect of this novel arrangement.





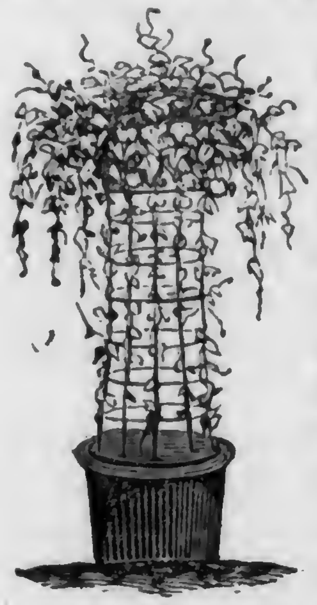
Some idea of the design may be gathered from the rough sketch annexed. We are highly satisfied with the experiment, and expect to improve on it next season.

We notice that, on these detached pedestals, Cinerarias bloom in a very superior manner—the result, doubtless, of *elbow room*. They send up tall, strong shoots, bearing an enormous number of fine blooms, which retain their freshness and beauty fully 3 weeks, and even longer. Nor does any of the foliage damp off, which is unavoidable on shelves amongst other plants.

A conservatory wholly arranged with rustic work, backed by a variety of fine climbing plants would be a striking novelty, and could be made singularly beautiful.

It does not come within the scope of this paper to describe that portion of the oblong house, L, separated from the other by a glass partition,—which is used for propagating and forwarding the growth of plants under a higher temperature than the conservatory. But we may remark that it is a very great convenience to an amateur to pass from the one department to the other *without going out of doors.* The facility of transfer is also of immense advantage in winter.

One other feature in our style of winter decoration is, the growth of climbing plants in pots, trained up circular wire frames of various patterns and sizes. These are grouped among the miscellaneous shrubs and plants in such a manner as greatly to counteract the otherwise unavoidable formality of pots in rows. We use these from 15 inches high up to 8 feet. Really there is no end to the happy combinations of beautiful effects, attainable from this process. Those patterns with a canopy top are excellent, from which the slender growth of Senecio Mikanoides and other climbers hang down in graceful pendants. It may not be amiss to add that we have obtained these better in Philadelphia than elsewhere, and at reasonable prices,—more than an equivalent for the exorbitant freight to New York, charged by that anaconda of monopoly, the Camden and Amboy R. R. Co. The source alluded to is M. Walker & Sons, 13 N. 6th St. An order we made up, of patterns and sizes to suit our own ideas, they executed with fidelity, and much to our satisfaction.



The sketch annexed is a rough attempt to illustrate one of these canopy, circular trellis, now in our conservatory. It is 6 feet high, set in a pot 9 by 9. Each of the perpendicular rods descends to the bottom of the pot, close to its sides, so that the frame is held perfectly secure. The horizontal wire work is, of course, above the surface of the soil.

Whether we have or have not succeeded in delineating our unpretending structure, so as to be readily understoood, remains to be proved. These descriptions are necessarily more or less ambiguous, and hard to follow out to practical conclusions. All we can expect is, to suggest the idea of not depending wholly for the adornment of conservatories upon a stock of shrubs and plants, grown in pots, as furnished by nurserymen, and arranged in the same formal manner as at their commercial establishments. It is all very well when plants are exhibited *for sale;* but very bad taste, indeed, when intended for *decorative effect* by amateurs.

Of course a Calla Lily remains a Calla wherever it is recognized, and we pretend not to make a Rose look any more refined than Nature has furnished it ; but there is all the difference in the world between exhibiting the Calla in harmonious juxtaposition, and exposing its long, bare stalks, to its own manifest detriment, and the greater injury of more modest growing associates in its immediate vicinity.

And now, having disburdened our minds of this branch of the subject, we can take up with more freedom the description of certain specialties in our list of " Winter Favorites."

GRAFTING THE PEACH.

BY P. J. BERCKMANS, AUGUSTA, GA.

As we have practiced this method quite extensively, our experience is that no tie of a lasting texture should be used, such as wax cloth or yarn, as the tie prevents the expansion of the stock, cutting in it (unless removed when the graft shows signs of vegetation, and often injuring it by the operation) and lessening the chances of success. I would recommend bass bark as the best material, it remains sound long enough to allow the graft to adhere to the stock and never cutting in the bark.

Grafting the peach is a very easy matter in this climate, we prefer performing the operation in November, if practicable. We use the whole seedling stock and whip graft upon the crown of the root, tie with bass bark or prepared poplar bark (*Liriodendron tulipifera*) and plant so as to leave only the terminal bud of the graft out of ground ; the latter preventing any air to come in contact with the splice and rendering *impermeable*, wrapping or waxing unnecessary and injurious. On the whole I prefer budding and only graft such stocks as are too small to insert a bud upon. When the grafting has been done in November, the loss is slight, but if delayed until mid-winter and then planted out the loss is often 30 per cent. If performed towards spring the chances of success are in favor of the operator.

HORTICULTURE IN TENNESSEE.

BY FRED. J. FRENCH, ESQ.

Read before the Penna. Hort. Society, March, 3 '68

The ability to control labor has rendered those heretofore engaged in stock growing and in the production of cotton, tobacco, and the cereals almost indifferent to that branch of industry which includes the culture of fruit, as an object of commerce. The rich and quick returns from a soil naturally fertile, acted upon by a genial climate, were, in most instances, satisfactory. The planter, it is true, filled his orchard with fine fruit trees, and experimented with the grape, and the result has been that, while in many instances these have not equaled expectation ; in other sections, where the land was light, and the quality of stock planted poor, the yield far exceed it.

New causes are now bringing about a great charge, destined to affect materially this interest. The great upheavings of society, resulting from the war, with the consequent change in the character of labor, have turned the attention of owners of the soil to new objects of production, more congenial to their tastes, and with a view of compensation more remunerative than the planting of cotton.

The establishment of the "Tennesse Horticulture Society" recently, has awakened an interest that threatens to give fruit growing and gardening generally a great impetus throughout the State. The formation of Societies to act in concert with it has already called a number of prominent horticulturists to this region, while the reports they give will, it is believed, bring many more. Many of the finest orchards in the country were destroyed during the late struggle. Enough remain however to prove that in many portions of the state, fruit has been grown equaled only by that upon the Pacific slope. Mr. Dodge, whose celebrated pictures of Jackson and Clay, have rendered him well known, has grown apples superior to any presented wherever exhibited. Grapes are raised with great success and wine made from fruit grown near this city, will compete with the best in the country. In fact, fruits of all kinds flourish here ; yet the attention given them has been of so limited a character, that instead of a market for export—six weeks earlier than north of the Ohio river—Tennesse is to-day drawing her supplies of fruits and vegetables, to a great extent from that section.

In the department of flowers, prompted by that refined taste which actuates a cultivated people, establishments devoted to rare and beautiful plants are found all over the State. Some account of these may serve to give an idea of the extent to which this branch has been encouraged in this vicinity.

Near the field where a short time since one hundred thousand men confronted each other in fierce strife, stands a large and imposing edifice, dedicated to a class of unfortunates with scarce less reason than those engaged in the conflict of that day. Tennesse has, in the large institution here erected, made ample provisions for not only her own, but for many of the insane of other States, whose friends are attracted hither by the excellent management and arrangements for mitigating their sufferings.

It is not however, the asylum for the Insane that, for the present engages us ; but some of the surroundings designated for their amelioration. Leading through the lawn of about forty acres, a wide carriage way winds easily amongst groups of noble evergreens, to the main building. Tastefully formed beds of flowers are seen on either hand ; rockeries, grottos and artificial lakes are there too ; not placed, it is true, with an eye to artistic effect, by the landscape gardener but still pleasing from the natural beauty that surrounds us. A trellis covered with that singularly beautiful climber *Cissus discolor* marks the entrance ; and with a pang at the sad fate of so many fellow mortals, let us accept the courtesy of the Superintendent, Dr. W. P. Jones, and proceed at once to the object of our visit. Taking Mr. Sharkey, the gardener in charge, for our guide, we enter the " Greenhouse "—a lean-to 80 feet by 18, and 18 feet high at the back,—now filled with *Pelargoniums* on the main shelves. Of this species 250 named varieties are here ; while, on the other hand are *Cineraris*, *Primulus*, &c., for spring decoration. The " Conservatory "—a span roof 50 feet by 25 and 30 feet high,—is occupied by *Camellias*, comprising eighty named kinds ; indeed all that is new and rare of this species may here be found, their dark rich foliage in marked contrast to the flowers of this magnificent genus. Towering to the roof, and the elegant *Araucarias Braziliensis* and *Imbricata*, and the *Norfolk Island Pine*,—each a specimen of beauty. *Cryptomeria*, *Japonica*, *Euphorbia splendens* and *E. jacquineaflora*, now in full flower. *Inga pulcherrima*, *Ficus elastica*, and other large specimens are here seen, while *Rhyncospernum jasminoides* and *Hoyas* cover the walls.

Passing through the grapery we have a lean-to

55 feet by 20 and 18 feet, at the back appropriated to *Rhododendrons*, *Azaleas* and *Roses*. Of the first, thirty sorts, mostly hybrids and of the second, more than one hundred named varieties. Mr. Sharkey here shows 36 standard *Lantanas*, beautifully grown, and all different. The "Stove" 50 feet by 18, brings us at once to the tropics. A *Stanhopea tigrina* is now dropping its flowers from the block on which it is suspended, large *Palms*, *Latania Bourbonica* and *Areca rubra*, spread their wide fronds ; *Caladiums*, *Marantas* and *Cissus* in endless variety, are here. The *Cycas revoluta* shades *ferns* and *lycopodiums*. The deep green of the *Medinilla magnifica* and *Gardenia Stanleyana*,contrasts with *Crotons* and *Dracænas* ; while the *Philodendron* seems to be feeding on the exuberance of growth around it. The curious *Nepenthes distillatoria* is resting, after its singular display of distinct pitchers ; besides numerous rare exotics, interesting to the lover of flowers. For display the "Intermediate" house, with its span roof 50 feet by 18, glass to the foot, gives the best effect. Here in the spring, Mr. Sharkey shows his *Fuchsias*—beautiful pyramids, grown on a single stem. At present the *Hibiscus*, single and double, enlivens the house. *Rondoletia*, *Heterocentron rosea* and *alba*, *Chorizemas*, and *Goldfussia* are among its many attractions. To the general observer the "Victoria" house is of most interest ; it is circular, all glass and 30 feet in diameter. In the absence of its great lily,six bracts of the *Poinsettia pulcherrima* in full blaze of beauty, make amends. *Thunbergia laurifolia*, *Allamandas*, *Ipomœa horsfallia*, *Sardinia grandiflora*, *Musas*,with large specimens of *Euphorbias* in full flower, give this house a most lively appearance. Ending our visit where we should begin, in the "propagating" house, we form some idea of the labors for filling these large houses and beautifying the well laid out parterres. *Calceolarias* already give promise of their charming beauty ; bedding plants, new *tricolor Geraniums* and other novelties are raising their heads—evidence of the skill and care of their manager, who thus is instrumental in giving to the lovers of floriculture a rich treat for study and pleasure.

While flowers are thus made to "minister to minds diseased," the refined and cultivated can in nothing exhibit evidence of greater elegance and taste than by a lavish display of floral beauty. Few places in the South can boast of more attractions in this way than Bellemont, the elegant residence of Dr. and Mrs. Cheatham, formerly Mrs. Acklin. The conservatory, built of iron, is truly a Crystal Palace,with its high dome and spacious wings. Each department is filled with costly exotics, rare and beautiful. One *Norfolk Island Pine*, standing over thirty feet high. The collection of *Camellias* is very fine. Many of them are large plants, more than fifteen years old, and are covered with flowers. Near this is the stove, where some of the largest palms in the State are shown. The variety of tropical plants displayed in this house is large, and reflect great credit upon the skilful gardener, Mr. Gray. A house for forcing grapes adjoins this. The beautiful lawn is studded with arbors, elegantly designed in iron ; while statues and ornaments mark the refined taste displayed in every part of the grounds, and give a charm to the place.

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ARE ROOT-GRAFTED APPLE TREES AS GOOD AS THOSE BUDDED OR TOP-GRAFTED.

BY C. M. HOOKER, ROCHESTER, N. Y.

About twenty years ago this question was pretty thoroughly discussed in the Horticultural papers of that time, and if we are allowed to judge by the practice followed almost universally by nurserymen and planters throughout the country to the present day, with apparent satisfaction to nearly all parties, decided in the affirmative ; yet from time to time we see the question brought up, and recently I have noticed several articles pro and con on this subject in some of the papers.

It seems strange to any one acquainted with the vigor of growth, and healthful and symmetrical appearance of a well cultivated block of root-grafted apple trees as they stand in the nursery, or as we see them all over the country in orchards of all ages, from those just planted to those in full bearing condition and everywhere proving satisfactory, that such a question should arise in the mind of any one.

If we will take the trouble to inquire into the methods pursued in propagating the apple in this country, we shall soon find that twenty-four twenty-fifths and probably ninety-nine one-hundreths are grown by root-grafting. But there are certain places in the country where from some peculiarity of soil or climate, root-grafts do not live well the first year of planting—generally from the soil being too heavy—at such points propagators have found it more profitable to grow them by budding or top-grafting ; others from not understanding root-grafting have raised them in the same manner. Now when those budded trees come into market, the growers of them generally find that they cannot compete with the root-grafted trees in beauty of appearance or cheapness, and consequently what is more natural than that some of them, or unscrupulous agents,should raise the cry that their budded trees were superior in early fruitfulness and longevity to those root-grafted.

More than twenty years ago I commenced raising apple trees by budding, but in a very short time found that I could not succeed in raising as handsome, thrifty trees in that way as my neighbors did by root-grafting, and consequently abandoned that method of propagation, and have ever since root-grafted the apple exclusively. In the last twenty years the establishments in which I have been interested have planted several millions of apple grafts—sometimes as many as four or five hundred thousand in a single year, these trees have been grown until of a marketable age and then sold all over the country, North, East, South and West, and yet we have never heard a word of complaint from the planters of them. that they lack vigor, early fruitfulness or longevity ; on the contrary we are in frequent receipt of flattering testimonials as to the great satisfaction they have given on coming into bearing condition. If any one wants better evidence than this let him look around him,in almost any part of the country : the greater part of young and thrifty orchards are root-grafted ; undoubtedly there are many planted on unsuitable soil, or where tender varieties have been set in a severe climate, or that have been neglected and allowed to get stunted from want of cultivation,that have thus disappointed their owners. In such cases, if they are root-grafted trees, as the chances are that they will be, as very few others are planted, it is very natural that some persons should ascribe the failure to root-grafting, instead of to the true cause, particularly if an interested party is at hand to suggest it ; but I believe it to be impossible for any one to produce an orchard of root-grafted apple trees, upon suitable ground, where the selection of the varieties has been adapted to the climate, and which has been properly taken care of that has not done well.

What is there about root-grafting that its opponents take exception to ? They say that using a part of a root instead of the whole, naturally produces a feeble tree. Let us see whether this is merely a theory of their own, or founded on experience in the past. Have not gardeners, for hundreds and perhaps thousands of years grown many kinds of plants from root cuttings, and also from cuttings from the tops or limbs, and yet we hear nothing about our Gooseberries, Currants, Raspberries, Blackberries, Roses and Geraniums being enfeebled by this process. Now root-grafting is nothing more than taking a piece of the root of a plant, or root-cutting and grafting a limb or cutting from the top upon it to insure the growth of the cutting, and pray what is the process of budding, but inserting a small cutting in the plant above the ground ? So we see there is no truth in this theory against root-grafting the apple. Experience, which after all is the best teacher in these matters has abundantly shown, by the practice of the best nurserymen and planters of apple orchards in this country for the last thirty years or over, that root-grafted trees are as a rule superior in appearance, in the nursery and equal at least in vigor, fruitfulness and longevity to those top-grafted or budded.

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INTENTIONAL SECOND EXPOSURE

SCARLET FLOWERS.

BY WALTER ELDER, PHILADA.

As many contributors have got *Scarlet Tomatoes* "upon the brain," here is an article upon *Scarlet Flowers*.

Among all the colors that blooms assume, none are less associated with fragrance than scarlet. We cannot, at present, recollect a bright scarlet blossom that is sweet scented—yet no other color among flowers is more admired and sought after. Scarlet prevails among Balsamina, Euphorbia, Geranium, Poppy, Salvia, Bouvardia and Verbena, yet none of the scarlets are of sweet perfumes. Some of the light colored Balsams and Verbenas are sweet scented, but none of the scarlets are. The common Sage, with blue blooms, is odoriferous both in flower and foliage; but all the scarlet Salvias are devoid of smell.

None of the sweet scented leaved Geraniums have scarlet blooms, and none of the scarlet bloomers have sweet scent of leaves nor of blooms. Some of the white margined Poppies have pleasant odors; but the British scarlets are not sweet scented. The British white blooming Hawthorn is of the most delightful fragrance; the scarlet-flowering has no smell. Some of the Honeysuckles are sweetly perfumed; but the scarlet trumpet is scentless.

All the Beans with light blossoms have pleasant odors; but not the Scarlet Runner. The Rose gives fragrance to all its colors; but the Gloire de Rosamond, which approaches nearest to scarlet, is as scentlesss as the Yellow Harrison. The florist varieties of Tulip have a gentle odor, but the scarlet has as little perfume as the yellow. Many of the flowering shrubs have very fragrant blossoms; but the scarlet Cydonia has no smell. Carnations and Gilliflowers have some blooms approaching to scarlet—they are fragrant.

There are plants that bear scarlet blooms or scarlet fruits, suitable for every department of ornamental gardening, and every department should be adorned with scarlet, or a near representation thereof, for no decorations are complete without it. In glasshouses there are Bouvardias, Cupheas, Euphorbias, Alonsia, Geranium, Gilliflower, Lachenaltia, Manettia, Salvias, with scarlet blooms, and Poinsettia with scarlet leaves, and Ardisia with scarlet berries.

For out-door flower beds, Cannas, Balsams, Carnations, Gillyflowers, Cacalia, Lobelia cardinalis, Lychnis, Bouvardias, Geraniums, Cupheas, Salvias, Gladiolus. Tulips, Verbenas, Zinnias, &c.

For Climbers, Scarlet Trumpet Honeysuckle, Manettia, Cypress vine, Scarlet Runner Bean, &c. Among trees, Cercis Canadensis gives a representation in blooms in early spring, and Scarlet Oak and Red Maple, with leaves, in autumn. Among shrubs, Sorbus and Deciduous Euonymus, and Red Snowberry, with fruits all fall and partly through the winter. Cydonia, with blooms in early spring, and Tartarian Honeysuckle, Sweet Briers, &c., with fruits through the autumn. In those different departments the *sight* can be feasted upon scarlet all the year round; and the *scent* can feast upon the fragrance of very many other kinds of plants.

Many of our enterprising florists and seedsmen have given a fresh impulse to the love of floriculture, with their finely illustrated Catalogues, within the past few years. They would even be more intelligent if they had abbreviations of the colors of all species and varieties, and then the purchasers could select, sow and plant more knowingly, to adorn their parterres with all colors, and especially dazzling scarlet.

MY PLAN.

BY J. H. CREIGHTON, IRONTON, O.

Much has been written about pear trees, and a stranger to their habits might think they were a sickly and uncertain kind of tree. I fear that beginners will be discouraged. My plan is to plant and keep planting. If one blights I cut it back, expecting in most instances that it will entirely recover and run its chance not to blight again for many years. I don't care whether it is cut back immediately or not. Now I will make a statement that some of your readers may correct if they can. After all that has been said about *blight*, I don't know of any case where it destroyed *twenty-five* per cent of an orchard of a hundred trees. In most cases only a few. Now shall we be discouraged because a few darlings are blighted. My remedy for blight is *plant*. If one dies I plant two, if two dies I plants four. If it should be said they are costly, I reply that I get them when small and keep them on hand ready to set out. I don't believe blight is contagious. It don't come often, even in the low land.

NOTES ON CONIFERÆ AT THE SOUTH.

BY MR. T. AFFLECK, NEAR BRENHAM, TEXAS.

What a terrible *muss* the printers have made of my communication in your number for January.

The acid spoken of is Cresylic. The group of acids in coal tar, known as *Carbolic*, on being separated, were "found (not formed) to number several."

One entire paragraph was well nigh incomprehensible. Read it thus:

"I found them so highly valued in England, that I was led to try them here. They form the active principle in sheep-dips for scab, &c.; in ointments for foot-rot; smutvore; in powders for preventing turnip-fiy, &c., and in all disinfectants."

Another should read: "I suggested carbolic and cresylic acids; and the crude article, containing both, was pretty freely tried, &c."

For "*pryers* upon young seedlings," read *preyers*.

The article on *well-tested evergreens* is interesting, although of little or no value to us.

Having occupied the whole morning, up to this time, two p.m., in doing mere labor, to which I am entirely unaccustomed, and for doing which —if it were possible to get any steady or satisfactory work out of ninety-nine in a hundred of them—I would gladly pay a negro,—the bones and muscles are worn out; so, I try a "resting spell," in telling you something of *our* 'well-tested evergreens."

Of the *Coniferæ* few are grown. They are not prized as with you. With me they are favorites; and I had some very handsome and well-grown specimens in Mississippi, but in moving out here in the spring cf '61, I lost many, many thousands of a vast collection, the work of eighteen or twenty years, in the burning of the steamer "Charmer;" have had no opportunity since to replace any of them during the war; and now cannot afford it.

Probably the most popular and beautiful evergreen all over the South, is what we know as the "Laurier amandier," or Almond Laurel, (the *Cerasus Caroliniensis*,) and also as wild peach, &c. The tree is a small but handsome one, when well grown, and the foliage brightly, beautifully, glossily green. It bears the shears admirably, and forms the most beautiful of ornamental hedges; though, of course, a poor barrier to breaking stock. I have seen living walls, ten to twelve feet high, and, perhaps, thirty inches through at the ground, and six inches at the top, with arched passways cut in them, with edges almost as sharp as if cut in stone.

The "Cape Jessamine" (*Gardenia florida*) is another favorite; grows freely and to a vast size, on suitable soil. Always beautiful, and especially when in flower.

G. radicans, too, covers a sloping bank prettily.

Magnolia fuscata and *Olea fragrans* are unequalled. Not so much as pretty evergreens, as in the delicious and delicate odors of their abundant blossoms.

The *Camellia* I need not descant upon. To have flowers in perfection, the plants need an awning or other shelter when in bloom.

Ligustrum lucidum is a very pretty evergreen tree, and has a rich look of abundance when loaded down with its vast spikes of black fruit.

Ilex opaca, our native Holly, grows to a vast size in favorable localities; generally in forests with the queen of all evergreens—the *Magnolia grandiflora*. I saved a specimen of each from destruction, a good many years ago, in southern Mississippi, upon my plantation there, growing close by each other, on the banks of a lovely little crimpling forest streamlet, the banks of which were covered, completely coated, with rich *masses* of sweet-smelling *lichens*, graceful ferns, and the lonely little Turkey-berry, whose botanical name I cannot call to mind. The stream wound in and around little knots and knolls, with little bits of bottoms or rich nooks, on which grew dense masses of *Laurus Caroliniensis*, *Olea Americana*, *Cerasus Caroliniensis*, *Ilex vomitoria*, *Magnolia glauca*, &c., covered over with heavy festoons of grape-vine, the yellow Jessamine, (*Gelsiminum*) &c., &c.

The Holly stood upon one point, the Magnolia upon another. Each was from sixty to seventy feet high—vast cones—their branches sweeping the ground and bending gracefully over the streamlet; which twinkled merrily but soothingly along over its clear bed of pure sand and gravel, and alive with sun perch and the silver minnow. And each was festooned, all through its interior growth of branches, with the lovely, graceful, always waving gray moss, (*Tillandsia usneoides*).

Many an hour have I spent resting there during the heat of a summer's day, whilst the negroes and teams had stopped for dinner and a two hours' rest.

There—a call to dinner, now, and I go, feeling rested and refreshed; having, in the recollection of pleasant scenes and days gone by, forgotten my troubles and annoyances. I have not named a tithe of our riches in evergreens, native and exotic.

But you may well suppose that few care whether any of all your correspondent's list of pines and spruces will thrive or no, with the *P. Australis*, and that most exquisitely fragrant of all the tribe, the Frankincense pine (*P. tæda*) all around us; *Cedrus Deodara* and *Cunninghamia lanceolata*, are sound and vigorous; the live oak (*Q. virens*) now making this loneliest of valleys, *Glenblithe*, spread out before me as I write, fresh and summer-like; where our farm hedges of *Rosa lœvigata*, *R. microphylla alba*, *Cratægus pyracantha*, &c., are all evergreen.

Yet, I love the *Coniferæ*.

[We have taken out a few political allusions in our correspondent's letter. We can readily excuse his writing them; surrounded as he is by misery, in contrast to his former happy prosperity, it is naturally ever present to his mind. But our rule on this head is imperative.]

TOMATOES, &c.

BY S. L. ALLEN, CINNAMINSON, N. J.

I have been much interested in the discussions upon the cultivation of the tomato, and the merits of the many different varieties.

It is one of our most valuable esculents, and my opinions and experience differing materially from those of some of your correspondents, I hoped to add a little to the general mass of information, by communicating some of them.

The number of varieties now offered for sale. each, either earlier than any other, or combining in itself the good qualities of all other varieties known, is marvelous. Although it seems an important part of the business of some seedsmen, to dupe the public, no doubt it might frequently be avoided. Any one, for instance, buying the Keyes' Early Prolific Tomato, with but slight knowledge of the subject, would know it was a humbug,—that it was impossible for it to be "thirty days earlier than any other variety." No seedsman, with any acquaintance with tomatoes. could believe it himself, or expect the confidence of intelligent men.

"Thirty days earlier"—what does that imply? That it would ripen fruit before plants of other varieties have attained more than one-third their growth, or have set fruit the size of a penny piece. Indeed, it is difficult to conceive how three days could have been gained so early, if equal care is given to each variety, or even how it could be gained in the whole season. Experience, this year, proves it no earlier than the variety usually grown for market here, and not nearly so productive. I deem it, however, an acquisition, and had it been described truthfully, as early and prolific; fruit handsome, of medium size; in habit a dwarf; therefore desirable for forcing, for amateurs and private gardens—it would have been well. So many thousands of dollars would not have been made upon it, but the public would have been benefited, and seedsmen sustained. I hoped it might be three or four days, or even one day earlier, but was disappointed; but having abundance of seed, intend fuller trial. To any one extensively engaged in growing tomatoes early for market, each day that a variety equally good and prolific with our best, exceeds it in earliness, adds a value to that variety over others of fully one hundred dollars Your article, and one by L. B., on the "Culture of the Tomato," I cannot conceive the correctness or value of. It *may* be very desirable for amateurs, but for a market gardener to put up walls for profit, would be a decided mistake. The stone alone on the ground, would cost more than the fruit, granting double the yield mentioned, would net in ten years, if it did not ripen until "August 10th." As for defective and high priced tomatoes, I sold on that very day one hundred and fifteen baskets of good quality, at about thirty-five cents a basket. No doubt about 10,000 more were sold at about the same figures, many of which were very fine, neither rotten nor defective. Poor tomatoes can scarcely be sold, in the height of the season. In regard to earliness, we think it a backward season that ripens no tomatoes in the 6th mo. (June). I picked in 1867, by 8th mo. August 10th inclusive, over one thousand baskets. I can but think, however, that L. B. has made a mistake of just one month in date. Any one, by having good, healthy vines in full bearing at the time of the first frost, may have fresh tomatoes in the new year, by pulling before the second heavy frost, and hanging in the cellar. Protection by walls, and raising from the ground is an advantage. It is customary here to pick thousands of baskets green, about the time of first heavy frost, and place under sash, where they gradually ripen for market. Some varieties, only, rot badly. The Fejee is one. The Keyes, in rich garden soil, would be desirable; one early planting and one about the middle of the 6th mo. (June) would be satisfactory for family use.—Mulching would be beneficial. The Tilden seems to have been pretty well discussed in the *Monthly*. The Cook's Favorite is an old variety, newly named, originating in this neighborhood. A few thousand plants purchased of the originator, the year of its *debut*, proved so unsatisfactory every way, that it was entirely discarded.

PRUNING.

BY J. H., LONG ISLAND.

Pruning trees like making good bread is an art not to be learned through books and newspapers, but through individual study and experience. Trees differ so much in their form and habit of growth and the uses we require them for, as well as the diversity of the soil and climate, that it is plain no mere theory will be adapted to all conditions and tastes of the planter. Add to this too many of our horticultural writers are mere theorist, own not an acre, and have no practical experience, and their ideas often derived from reading foreign publications that from the diversity of soil and climate of Europe are not well suited to this country. You may ask if mere theory is worth so little why does the writer put his pen to paper. The reply is very much like the Friends say when they have performed a religious duty, "done for the peace and satisfaction of my *own* mind."

But about pruning we will take up the apple first. Some writers will tell you to cut off all the limbs half way when transplanted; we say not. for if you do the head will be filled with treble the number of shoots that are wanted to grow, and next year you will have to cut most of them off. Apple trees differ so much in the form of their growth that no rule but good judgment will apply. Some, if they have plenty of good roots, will only need thinning out all the inner branches and twigs, leaving only three or four main limbs, such as you wish to remain and form a good head. We believe the buds of last year's growth are much the strongest on all trees, possess more vitality and it is unwise to cut all the young growth off as some do.

Having so trimmed the branches with a reference to the future shape of the tree when first planted, it will need but little trimming again in several years, except to remove young suckers, if any come. Apple trees should be so shaped by prunings that a person can climb with ease through the branches near the body and take his basket with him. This is the ideal of a perfectly shaped tree. A tree can be trimmed too much for its health and longevity, too many of the little spray and small branches cut away, but it is seldom done. Cherry trees, we generally let alone with the exception of properly shaping the head when first planted and always having reference to the number and size of the roots. And we may remark it is better to stake and tie trees when planted, if deficient in roots, than to mutilate the top of fruit trees too much. In pruning ornamental deciduous trees, we should be governed by the shape we wish them to take. If we want thick bushy trees, that will give a dense shade around the dwelling, then we should cut back severely. The American Elm may be trimmed to a bare pole and so may the Maples, except the Norway, which is dense enough naturally without any assistance from art. But if they are for avenues or for street planting, where a quick. upright growth is wanted, then thinning out the inner branches near the trunk is all that is necessary. Where trees are liable to have their branches torn and split by the high winds, like the White or Silver leaf Maple, forming them into round heads by cutting one-half back all the leading branches when young will obviate this trouble. If we wish our Larches to grow tall and wide spreading, we may cut out the small branches; but we think the beauty of the Larch, especially the European, which is so far superior to the American that the latter should never be planted for ornament, is in its compactness of growth. A Larch that has been trimmed back to one-half of its length of branches, when transplanted, is one of the most beautiful trees for three months we have seen. Evergreens should be pruned by the nurseryman before they are sold, and then the planter will have little else to do but take good care of them. While we admire the lofty head of the deciduous shade tree with its wide-spread sweeping branches, a neat, compact evergreen suits most persons best. We like symmetry of shape more than we care for exuberance of growth or a great size. An occasional White Pine lifting its head above the surrounding trees is a striking object in a landscape, but we want but few in our yards. The neat dark green of the Balsam Fir, short lived though it be, will cause it still to be planted for immediate effect. They, if planted in moist soils, and the leading top-shoot cut off, will retain their beauty many years.

Few are aware how evergreens trees can be changed in form and habit by judicious use of the shears. The tendency of the Fir is to run up tall and lose its lower branches. By cutting off the leading shoot occasionally, to prevent this habit, it is a tree of beauty quite desirable. The Norway Spruce can be made to grow nearly as we wish. By summer pruning one-half of the young growth, it will throw out an abundance of young buds, and in a year or two an open young tree be converted into a very close growing one.—Early in the summer is the best time to trim evergreens, or in truth any other tree, if we have time to attend to it, as the wound soon heals over and the buds below will be increased and strengthened. In selecting Spruce trees we should be governed by the form we want them to assume. If for picturesque effect, then select trees of drooping habit, whose limbs sweep down towards the ground. As Spruces are all seedlings, and each differs in some way from the other, we can have them, by a little care and pruning, to assume the shape we want. By cutting off the leader repeatedly they will spread wide over the ground ; or by shearing them annually they become round as a top. But Hemlock bears the shears the best of any of the American Evergreens we are acquainted with, if pruned in summer while in active growth.

We can form it into a low beautiful hedge, a round compact tree, its lowest branches resting on the ground like a cone ; or we can elevate it among the tallest trees, a compeer to the White Pine. Pines are pruned by cutting off, in summer, one-half or more of the central shoot. If this is done at the proper time, frequently young buds will start beneath. This is frequently necessary to keep the upper branches from extending beyond the lower. as this spoils the shape. Most people want an evergreen to branch low and slope gradually and evenly to the top.

There is not as much attention given to pruning shrubs as there should be. Neatness and compactness of form is most compatible to abundance of flowers, and if by frequent cuttings they become deformed or stunted throw them away and plant young bushes. Where one likes variety, some varieties may be trained up to a single stalk, like a tree, all side shoots cut away. We have seen beautiful Forsythia, Philadelphus or Syringa and Weigelia treated in this way like miniature trees, and they excelled them in beauty ; but this article is long enough, and even now needs pruning.

TOMATOES.

BY ISAAC HICKS, NORTH HEMPSTEAD, L. I.

As our horticultural friends are considerably exercised on the Tomato question, we will have our say, too, and perhaps add a little more to the confusion. I am glad of it, for good will result in the end ; for has not some old quaint author or poet said : "But quill to quill, (or pen. I forget which) like flints on steel do smile." They create sparks, and these sparks give us light.

There is no excuse for any one to plant and eat those small watery things we used to have when thick, solid and smooth potatoes, aye, and early too, can be had in such abundance.

Aye, and such is the benevolence of the age. scores of growers are continually offering us better, still better for a consideration. Last summer we decided on one thing : never to plant any kind but smooth growing fruit. If every farmer will take a turn into the kitchen, and peel a few for his dinner, he will never want a wrinkly, corrugated tomato. We have planted the Cook's Favorite for two years, and consider it very good, firm, smooth and early. We have also planted the Tilden, and found it to be a first-rate tomato. Last season we sowed early in 4th mo. at the same time in a hot-bed the Tilden, Cook's Favorite, Keyes' Early, (five papers) and the Maupay. We planted, in 6th mo., out on the south side of a board screen, made for the purpose of hastening their ripening, three large plants ot each of the before mentioned kinds. On the third of 8th mo. two each of the Keyes and Tilden were ripe. The Cook's Favorite followed in a few days, but the Maupay was far behind. As to quality, they were all good and solid, but the Keyes were the most unprofitable of any. The Maupay were very solid and prolific, but they were not smooth enough to suit us. The Feejee and Lesters perfected are both large and fine, but too late in ripening, and as frost comes too soon for them, we have discontinued planting. Our experience of the Cook's, Tilden, and Keyes, is, as far as we have heard from, the same with many others to whom we furnished plants. Keyes' did not ripen but little, if any, earlier than the older varieties, and was much smaller. As to being sweet—we could not see it.

THE PETUNIA.

BY W. P., DETROIT, MICH.

It is very interesting to mark the improvement which takes place, from time to time, in plants, where either careful selection or skilful hybridization has been adopted, and ot the many plants which adorn our gardens or green-houses few bear stronger evidence of the skill and usefulness of the cross breeder than the Petunia.

The first Petunia was introduced in England from Brazil in 1823. P. nyctaginiflora, the old common white, P. violacea, another original species, was introduced by a Mr. Twedie, from Buenos Ayres, in 1830, and from these species sprung the many superb varieties which are now seen. A great confusion arose on the introduction of the first purple Petunia, P. violacea.—When the plants were first exhibited they were supposed, by Sir W. J. Hooker, to be a Salpiglosis, and was figured and described as such in the "Botanical Magazine." It was afterwards figured in "Sweet's British Flower Garden," under the name of Neirembergia phœnicia. At last matters were set right by Dr. Lindley figuring it in the "Botanical Register" asPetunia violacea. It is remarkable there should have been so many doubts among botanists as to the genus of the purple Petunia, as it appears to differ from the white only in color.

For a long time after its first introduction, the Petunia was looked upon as almost worthless, and from the flimsey appearance of its flowers, was pronounced a *miserable weed*, but we must now abandon the word weed, for the Petunia has become a florists' flower and it is hardly possible to conceive that the beautiful,symetrically rounded flowers, with their brilliant coloring, could ever have been the descendant of such narrow petaled and starry-shaped flowers. Contrast the old Magnificent,or Snowflake,with President Lincoln, Crimson Gem, Charming, or Delicata ; the former ill-shaped flowers lopping over for want of substance ; the latter standing erect, forming perfect trumpet-like flowers of the most varied and vivid colors.

Culture: Petunias delight in a light, rich, open soil, and cuttings of the young shoots strike root freely in early spring, say February or March. Pot them, when struck, in small pots, and encourage to grow freely by placing them in a moderately warm place, close to the glass. As they grow, take care to pinch them back, so as to induce a bushy habit ; re-pot whenever the roots touch the sides of the pot, and by May or June you will have strong bushy plants, showing plenty of flowers, and lasting till late in autumn.

For bedding (except where lines or beds of the same color are desirable) they had better be raised from seed. Sow seed in March in well-drained pots, using a light sandy soil ; when the seed is sown, water with tepid water, and place a piece of glass over the top of the pot ; this obviates the necessity of frequent watering. When the young seedlings come up,prick out rather thinly in pans and place near the glass on the top shelf of a greenhouse, from which they may be transplanted to the flower beds.

The most successful hybridizers of the Petunia have been Messrs. F. & A. Smith of London, M. Rendatler of Paris, and last, but not least, J. Kadletz of Staten Island, N. Y.

The undermentioned were all raised by Mr. Kadletz, and are well worthy of attention for their variety, beauty and form.

* *Bizarre;* very large purple, ground striped with white and lilac, fragrant.

* *Mr. Peter Henderson;* in style of President Lincoln, white and crimson, with purple blotch in each petal.

* *Carnation;* resembling a carnation in style striped, free bloomer.

Bays water; bright carmine, mottled white.

Rosalind; delicate rose, with pink and white bars.

The Bride; white, with violet stripes, the best of its class.

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*Marked thus are double.

PEAR BLIGHT.

BY MR. J. T. NATHURST, LA PORTE, IND.

Permit me to report through your valuable *Monthly*, my experience on pear blight.

I have been cultivating pear trees, both standards and dwarfs, for the last seven years in this locality. I have about four hundred trees in orchard, mostly young, but some in bearing, besides a few hundred in my nursery. During all this time I have not lost a tree from blight ; have not seen a sign of blight in body or limb of a single tree. Pear blight, as far as my observation goes, is not very common in this section. I have had some mildew on the leaves of my graperies, but not sufficient to materially injure the fruit—Nevertheless, we have frequent thunder and lightning through every summer. I fully agree with your views in your article on pear blight in the February number, and therefore it is not necessary that I should say anything more on the subject ; I only state the fact as it has occurred.

POLE BEANS.

BY ISAAC HICKS, NORTH HEMPSTEAD, L. I.

We plant for family use from one hundred and twenty to one hundred and fifty hills of pole beans ; nearly all Limas. For string beans, we have not found any variety equal to the Indian Chief. Concord and the Rhode Island butter-bean are very prolific, but to be eaten in their green state, as string beans, are very inferior to the former, often called wax bean and butter bean.

The hills, for garden culture, should be three feet apart. About the first or second week in May, when the ground is in a suitable condition, and in good order, we proceed to dig out the holes, taking out three or more spadesful of earth; then in the centre make the holes with a crowbar, and put in the poles securely. Put a shovelful of well rotted stable manure, or if you have the article on hand, home-made poudrette in a hill; cover the manure two or three inches deep, and then plant the Limas carefully point downwards around the pole. Ten or more seeds should be put in a hill, so that if it should be a bad season, and only a part come up, we will have some to rely on. If more than four grow, when three or four inches high, leave the best and pull the others up. We think there should be but a very little soil thrown over the beans when planted, and that should be free from lumps and fine as possible. If the beans have not shown themselves in a reasonable time they should be examined, and if rotten plant again, and when a few inches high sprinkle them with guano water, or throw guano around the roots previous to a rain. Guano will hurt some vegetables, if used freely, but we have never known it to hurt Limas after they are a few inches high.

There is no vegetable we raise that pays us better for the care in planting and tending, than Lima beans. And when they are large enough to eat they are always in order on the table, no matter what other vegetables we have, or the meals we cook.

STRIPPING THE BARK of APPLE TREES.

BY MR. J. T. NATHURST, LA PORTE, IND.

Twenty-five years ago I grafted the tops of a number of large apple trees for a friend in south-western Ohio; the buds were just bursting open. My friend was engaged at the same time in stripping the bark from the body and main branches of a number of his large trees. They all formed new smooth bark through the summer. The object sought in stripping the bark, was to prevent the "bitter rot" with which some varieties were badly affected; it did not have the desired effect. His apples had the bitter rot next season just as bad as ever. It was then a popular remedy in that section for bitter rot, and I remember seeing whole orchards stripped of their bark, and always putting on new. It was done, as far as my observation went, in the spring, at the first active flow of the sap. My friend told me something about it being done "in the moon;" to which I paid no attention, any more than I do to it being done on "the longest day in the year." The practical application of this I leave to yourself and other able writers. I merely state the facts.

FORCING TOMATOES AND STRAWBERRIES.

BY P. CORCORAN, SHARON, PA.

On my employer's plan, Mr. James Westerman has erected a house, the past season, to grow vegetables and small fruits. It is forty five feet long and twenty feet wide, with side benches and centre pit. We have tomatoes abundantly since Christmas. I have now Wilson's Albany and May Queen strawberries, and some other kinds in full bloom. The lovers of tomatoes, by this plan, can have them, besides in growing enough of bedding plants on the side branches for the summer decoration of the grounds.

[Our correspondent refers to a plan formerly given in the *Monthly*. As he has been so very successful, we should be glad if he would give us some fuller account of it. It would interest many of our readers. Ed.]

HARDY VARIETIES OF THE APPLE.

BY MR. J. T. NATHURST, LA PORTE, IND.

We of the north-west are very desirous of obtaining hardy varieties of apple trees that will stand our severe winters. I am informed that the people in Minnesota, or perhaps Wisconsin, are petitioning their legislatures to send men to Russia to select some hardy varieties. Being a Swede by birth, and having spent the early part of my life there, I recollect something of the fruits of Sweden, and think hardy varieties can be found there as well as in Russia, and perhaps they will be more accessible. The apple tree is cultivated in Sweden up to its most northern limit, some four hundred miles north of Stockholm, if my memory serves me. There are Horticultural Societies, experimental farms and nurseries, which all would aid in making proper selections. We already have the Red and White Astrachan from Sweden, which have proved hardy here. I know that of late these varieties have been credited to Russia, but I doubt if correctly, as I distinctly recollect seeing large old trees of both varieties more than thirty-five years ago growing in different sections of Sweden, that must have been from fifty to one hundred years old, knowing how slow the apple trees grow in that country. Downing says the White Astrachan is "rather dry." So it is when over-ripe, but when in perfection it is, in Sweden at least, regarded as the best of the two.

EDITORIAL.

NATURE OF ROOTS.

The writer of this chapter, in 1853, published a little book called the *Hand-book of Ornamental Trees*, in which he wrote: "fibres are annual, dying out after a season's service. New fibres make their appearance as the extending roots grow; and are, therefore, further away from the collar of the tree in proportion to its age." (p.29.) It was the misfortune of the writer of that book not to be brought up in a library. At 25, fifty dollars would buy all the books he ever owned.—The one great book of nature had to furnish the chief material for his work, and hence he was deprived of the great essential element of modern book-making, the chance of repeating what some "Dubrieuls," or other "great authorities" had said before him. He had to risk the use of his senses, and of being pronounced by those more learned, "ridiculous." So it was not surprising when a friend wrote from England: "The Professor has read your book, and says your ideas about annual fibres are sheer nonsense. Lindley makes no mention of it in his Theory of Horticulture." But we have kept on our way, teaching it as the foundation of a good rule in transplanting, and meeting with so little opposition that we supposed it had quietly become a recognized fact, which no one thought it worth while to disupte.

Quite an excitement has recently arisen in England on this subject. Mr. Rivers, whom our readers know as the author of the "Miniature Fruit Garden," and who also has the misfortune to rely on experience, instead of books, for his facts, incidently made some statements which seemed to point to a belief in the annual death of root fibres, and straightway writers are for turning him out of the Orthodox Physiological fold. He holds his own, however, well; and we can help him by one single fact, which must convince any one who has had but a limited experience among tree roots, that fibres do die. If we dig up a maple or any fibrous rooted tree when, say, five years old, we find *hundreds* of fibres pushing in every direction a few feet from the tree. If we dig hundreds of such trees, we find essentially the same facts. Now let us dig the same species of tree twenty-five years old, and at the *same few feet* from the tree we find, perhaps, but a *dozen* leading roots as thick as one's fingers. Where are the hundreds of fibres which were in that spot twenty years before? Dead, long ago. These main roots extend, and the fibres are always found at the extremity of these roots, and every American tree planter practically acts on it when he starts away to where the roots extend in digging a tree, in order to get any fibres at all. If the tree be cut off close to the stem, he gets but a few forks or prongs, yet in that spot, years before, abundance of fibres existed.

The fact is, the fibres on roots are analogous to leaves on the stem. They serve their purpose a fixed time and die. As the stems grow, leaves form on their summits; and as roots push, fibres form on their ends. In fact, the underground portion of a tree is the analogue of that above. The seeds start, and pushboth ways; the germs of root growth and stem growth being to all purposes the same. The laws of their development must be essentially identical, the form and structure being the only metamorphosis. It needs no Darwin to tell an observant gardener this fact; nor a Gœthe to show the change in matter, but not in principle.

Again are our English friends exercised over a fact some writer has recently broached; but which our readers are familiar with from our pen, that when, by pruning or otherwise, a tree loses some of its branches, roots die in sympathy with the loss. The observant American gardener is here again a long way a-head of "Physiological Works." He knows that if a hedge of osage orange be kept as it ought to be, annually trimmed down to four or five feet, he never finds the roots far away. In twenty-five years they would be ten feet off, as a rule,—but let him neglect the hedge; suffer the plants to grow twenty feet high, and, in "less than no time," he will find the robber roots a long way beyond bounds. So, also, with his continually mowed lawn. Let the grass be mowed three or four times a year, for ten years; yet, when the gardener undertakes to "lift a sod," it peals off like an orange skin, nearly as if it had been put down but a few months before; but when he tries to take sod from a lawn which has been a year or more without mowing, he finds the roots run deep and strong, and he has to put considerable elbow strength on his turfing iron to get the tough thing up. To us, accustomed to these facts, it seems strange to read controversies as to whether roots really die when trees are pruned. How gingerly our English friends handle the matter, may be judged by the following extract from a paper by Mr. R. T. Fish, a Fellow of the Royal Horticultural Society, in the *Gardener's Chronicle.* He says:—

> "There is another unnatural mode of destruction, which I advance with more diffidence, and that is, the sudden destruction of the tops of plants. It is just possible—probable—I think almost certain, that the removal of the head of a plant will destroy many of its spongioles. I have observed, on cutting down plants in full growth, such as Fuchsias, Pelargoniums, Stove Plants, &c., that many of the fibrils perish afterwards. Possibly this may arise from the full tide of sap hopelessly advancing to find no adequate outlet, and having to flow back again. It seems, too, that sap in a state of rest may be more oppressive to the delicate vessels of plants, than the same sap in motion. The sap itself also remains stagnant and putrifies, producing decomposition, disease, and occasionally death, throughout the entire system. There is likewise a great reaction from the sudden stoppage of the circulation. A sort of paralysis settles down upon the entire plant, whose benumbing influence reaches to the extremity of the most delicate fibril. And if this inaction is of long duration, many of the spongioles perish."

We are very glad to find that, after eighteen years of effort, we may soon see these principles recognized by the "book makers," for, indeed, they have an immense influence on successful fruit culture in the United States, as we have repeatedly shown. And then it will be so nice for those who like to go to "authorities" for their facts—for there are many good gardeners who, like the French physician, stultify themselves by their blind worship of a man who writes a book. "Monsieur," said the girl, "master's dead." "Nonsense," said he, "can't be." "But he is," she replied, "and buried, too." "Impossible," he persisted, "every writer, from the time of Galen to the present, gives twenty days as the duration of the disease before death, and your master has been sick only ten. Go back!—you are certainly mistaken; he is not dead!"

And thus may some argue these roots not dead, and cannot die; but the observing man knows they do, and all that is wanting is for the scientific mind to systematize the facts, so that the man of practice may turn the law to his personal benefit in the art of gardening.

NOTES OF WESTERN TRAVEL.

Before leaving Cincinnati, we went out to see the nursery of S. S. Jackson, long known as an enthusiastic and first class cultivator. During the war the business came to a stand-still, through irreparable family losses. Recently Mr. McGregor, an excellent practical gardener, has secured an interest in the concern, which is now pushing things with a good deal of the old spirit and success.

The grounds are beautifully laid out, and filled with many rare and valuable specimens of trees and shrubs. A large dwarf Pear orchard is also attached, in which new varieties are tested and their relative merits compared. Much attention is also given to florists' flowers. A large bed of seedling Geraniums was in bloom, with the object of raising new kinds, and some very dwarf and valuable kinds were flowering.

Mr. Jackson is a mechanical genius as well as an enterprising nurseryman. Not the least interesting part of our visit was the examination of his various labor-saving machines employed in his business. One for printing labels was especially ingenious. A circular wheel, on the edge of which type are locked, presses, in revolving, against a sponge of printing ink, and comes down on a long strip of label wood. On this circumference, say the name "Bartlett" may be set up half a dozen times, and prints the name on half a dozen labels with each revolution, inking themselves, at the same time, for half a dozen more. So simple is this arrangement, and so rapid can labels be turned out by this instrument, that it would pay Mr. Jackson well to have it put regularly on the market, as no one in the wholesale trade could afford to be without it, after seeing how well it does its work.

So kindly were we treated by the ladies everywhere west, that we do not like to specify any one case more than another; but, certainly not the least part of our pleasures in Cincinnati was in the handsome entertainment given us by the intelligent ladies—wife and daughters—comprising Mr. Jackson's family.

Having a pressing invitation to meet our friends at South Pass, who were to hold a meeting a few days before the St. Louis exhibition, we took the Ohio and Mississippi R. R. for Odin, the junction of that road with the Illinois Central, about seventy miles south of which, South Pass (Cobden Station) is situated.

We are under great obligations to the Superintendent of this road for many polite attentions, and was pleased to hear from Dr. Warder and other friends whom we met on the train, that it was one of the best conducted, liberal, and most successful roads in the West.

Dr. Warder's fortunate company added much pleasure to this long four hundred miles ride, as every one who knows his love of nature, horti-

culture, fun and anecdote, can fully appreciate. Wherever the Doctor goes; the saddest face lights up with brightness; and it is no wonder, as we have heard it related, that even the wild birds in his garden will eat from his hand, and that even dumb beasts generally love him. We really envied our friend—he seemed a cornucopia of happiness, and we set ourselves to study how he came by it all.

As he got in at a way station, we noted him tugging away at an immense basket, stowing it away in a safe corner of the car. We made a note of it. The crying baby, always present in a long train, of course was here. "Why can't people leave babies at home when they travel," we saw plainly written on the brows of many whom we took to be bachelors. Suddenly the sounds were hushed. A pear in the baby's hand, and to its mouth, told something of the story, and only its half satisfied glance at the Doctor, explained the full mystery.

Presently came along a conductor, one of those abused men, whom all find fault with but none ever praise. This one was as smiling as a full-blown rose, a pæony, or any simile you please. It was so strange,—and he had a good word or a nod for every familiar face. Ah! there it is. Apples in every pocket, and grapes in both hands, and the Doctor's big basket not near so heavy as it was a while ago. Then, perhaps, the train stops for water, or for a passing train, and you see a group on the stand outside, and in the centre a tallish man with a microscope, showing a pleased crowd the beauty of some minute leaf hopper, some fungus on a buttonwood leaf, striking out for them some sources of enjoyment they never dreamed of, and which, no doubt, will ripen, and return tenfold to them hereafter. Or you may see him first out of his berth in the morning, waking up his fellow passengers to see the wondrous beauty of a sun rise on the broad prairie, coming out, as it were, of the exact centre of the railroad track hundreds of miles behind, and looking like the reflector of an immense locomotive, threatening to hurry on and dash all to pieces on the rails before it.

Out of such trifles spring the magic secret of a life which so charms all who come in contact with this favored son of Horticulture. We made the following note for a new truth: "The more a man really knows, the simpler and more childlike he talks and acts."

AKEBIA QUINATA.

In our notice of this new twining vine last year, we omitted to note its early leafing. At this time (April 10th) it has well developed leaves, which not even the lilac has. In another month it will be a mass of rich plum colored fragrant bells. It is undoubtedly amongst the most valuable hardy climbers introduced into our country; and we are astonished that it has not come to us with an European reputation.

SCRAPS AND QUERIES.

GRAPES FROM GREEN-WOOD CUTTINGS.—*Mr. G. W. Campbell, Delaware, O.*, sends us the following: "I send you to-day, by mail, a plant of the Miles grape, grown from a *green cutting* taken in June. I have forgotten whether you were present at the meeting in Sandusky, when I exhibited some plants grown from green, or soft, wood, and made some remarks in regard to propagating, and stated that, contrary to the teaching of many who profess to know "all about it," a plant was not *necessarily* bad or imperfect, because grown from a green cutting. I do not remember having seen an expression of your views on this subject; but, I take the ground that, if a plant be well developed, with well-ripened wood, and abundant and healthy roots, it matters not how, or from what kind of wood, it is grown; and the plant I send you will, I think, sustain my position, that good vines *can* be grown from green cuttings."

[We thought our record was pretty well known that there can be no possible objection to raising vines from green wood cuttings, or in any other way. In fact, the care and attention necessary to success, in such modes of propagation, are favorable to superior health. Leaving things to fight their way in infancy, in order to make them strong and vigorous, looks very pretty as an abstract theory; but the fact is, we have seen many a poor little chicken washed to death in a rain storm, when its mother's protecting wing might have preserved it for a long life of egg-laying or usefulness. Depend on it, friends, it makes no difference whether a bird is hatched by a patent incubator, or a setting hen. It is the *after treatment* makes the fowls. Just so with the vines.]

THE WINTER AT BALTIMORE.—A correspondent whose only fault is writing too seldom, says: "The last winter has been a very severe one on my Evergreens, though the thermometer, at no time, went lower than zero, and though Raspberries, Grape Vines and other things have not suffered at all.

Plants that have stood the last seven winters without being injured in the least, such as Thuja aurea, Thujopsis borealis, Thuja oblonga pendula, are badly scorched, and some, I fear, killed outright.

This winter has also settled the question with me, that the Sequoia gigantea will not do here. My plant, noticed by Mr. W. Brackenridge in your magazine some eighteen months ago, had attained a height of 16 feet, with a trunk of 9 inches diameter at the base. It had grown to be a perfect specimen everyway, when, last summer, the lower branches began to die to about 4 feet from the ground; and, during this winter, they died still further up, and even some branches near the top were killed, so that the symmetry of the tree is destroyed, and I am tempted to grub it up."

ARRANGEMENT OF A CONSERVATORY.—*W., Detroit*, says: "I have read your valuable magazine with much profit, for several years, and have often wished it contained some plans for a greenhouse attached to a dwelling, such as would meet my necessity.

We have been building a villa, in the "small gothic" style, two miles out of the city, with a greenhouse on the south side, 24 feet long, and 14 feet from back to to front centre,—in shape, the half of a double octagon. Through a glass door, from a library on the east side, we have a vista the length of the room; and, through a large double-window in the back, a fine view from the dining-room.

I am somewhat at a loss as to the internal arrangement for plants, vases, &c., and knowing your taste in such matters, thought I would trespass somewhat on your time and patience in asking your advice in the matter, thinking your hints would be as valuable to scores of other lady readers as well as myself.

I have been a cultivator of plants and flowers for many years, and have found the Cuphea Zimapanni a valuable early winter flowering plant. Have had the Erysimum Peroffskianum, and a new purple Candytuft, in flower, in my little house, nearly all winter. Find the flower of the Fern-leaved Chinese Primrose very inferior. Am not successful in everything. Have a large Banksia rose which utterly refuses to flower; and an Orange tree which, year by year, grows smaller, though not "beautifully less." It has now a yellow-jaundiced look, which is, to me, unaccountable.

[We have had this article on our table for two months, and have delayed a reply in the hope that our correspondent J. C. Johnston's paper, which we are able to get in this month, will supply most of the information desired. If anything further can help our correspondent we shall be very glad to try to give the information.

We are particularly sorry when ladies do not succeed, for, usually, we have to envy them their success in growing window or small conservatory plants. Possibly the house is too shady—for the Banksia rose will only flower where there is a *great abundance of light.*

The best way to renovate the Orange tree is, to cut away several inches of each shoot, and plant it out in a rich piece of garden ground. It will grow beautifully larger, and have healthy, green, large leaves, and strong shoots. Early in fall it will have to be repotted again.]

BOSTON MARKET CELERY.—*George Lennox, Oaks Corners, Ontario Co., N. Y.*, asks: "In your March number of the *Monthly* you make mention of Boston Market as the finest dwarf Celery, but do not say where it can be procured. I have looked in a great many Seed Catalogues, but in vain. Will you, in your "Notices to Correspondents," be kind enough to tell me where I can get it."

[Whoever has it please send their Seed List to the above correspondent. We suppose any Boston seedsman, who advertises with us, could supply it. Try Breck & Son, Curtis & Cobb, Washburn & Co., or Hovey & Co. We believe we have seen it, also, in the list of James J. H. Gregory, Marblehead, Mass., but are not sure.]

COLOR OF A COLD VINERY.—A *Chicago* correspondent says: "I have charge of a Cold Grapery—a lean-to. The back wall is brick, of a lead color. My employer thinks it would be better for the vines if the back wall was white. I prefer dark. What color is best for the back wall, and give the reason, and oblige a reader. The vinery has a Southern elevation."

[We think there is very little difference in the effect on the vine, between one color and another on the back wall of a vinery. We have seen fruit and health as good as could be desired under all colors, though we have heard theoretical discussions of various shades. As the present controversy stands, we decide in favor of the lead color.]

TRIMMING SPRUCE HEDGES—An *Ontario Co.* (*N. Y.*) friend asks the time to cut Norway Spruce, Balsam and Hemlock Spruce hedges. Is it in fall, or spring, or midsummer? I have some 15 to 25 feet high, which I want to get into shape like some I have seen.

[Under the circumstances you state, better cut them in May. Cut down to four or five feet, and let the base be four or five feet wide—triangular-faced like.

SURFACE ROOTS OF TREES.—*M. L. Dunlap* contributes an interesting paper to the *American Journal of Horticulture*, showing that the roots of Eastern Trees run on the surface, while the same trees, West, run downward—none near the top. His inference is, that roots prefer to be near the surface, but must, first of all, have moisture; and, as the West is famous for its summer drouths, the roots are forced to go deep to get their drink. This difference is a very important one, and should lead to different modes of culture in the West from the East.

GRAPE VINES FROM NORTH EAST, PA.—Some months ago we made some remarks, showing that the attempts of Mr. Griffiths to patent a certain mode of growing grapes was worthless, as a patent, on the ground of want of novelty. Many things have been grown that way. Dr. Taylor, of Newport, Ky., is one of the most successful growers of the Currant in precisely the same way as Mr. Griffiths grows Grapes.

We have an idea our friend Griffiths thinks, because we hold that the public has a perfect right to use the plan, we are opposed to the plan itself. Not so. It is an excellent one, and Mr. G. deserves great credit for reducing this old plan to such perfect practice. His vines are excellent.

He sends us a sample of Ionas, raised from small twigs last year. No one-year vines of any kind could be better. The Express Company also seems to appreciate their value, as they make us pay $1.75 for the little parcel by which we are able to give so favorable an opinion of the vine.

CHANGES IN BOTANICAL NAMES.—In a contemporary journal, *Mr. Peter Henderson* says:—"Sweeping changes in (popular) nomenclature are always of doubtful expediency, even *if* botanically correct," referring to the fashion of calling Geraniums of every class "Pelargoniums." We are glad to see some one protesting against these absurdities. We received some snubbing when, some years ago, we tried to stem the tide; and, for a while, stood alone amongst our contemporaries, who eagerly snapped up Gladioli, Cypripedia, Pelargonia, Rosæ, and we know not what—elegant Latin wherewith to replace common English. The rule should be to use English in everyday life, confining strict Latin to Botanical language.

MARTHA GRAPE.—*A Litiz*, (*Pa.*) correspondent says, the mildew, owing to the excessively wet season, used his Grapes badly last year. He had Rogers' 9, 4, 15, 19 and 35; all lost their leaves, but Martha did not. The fruit rotted some, as did that of the others; but for healthiness of foliage—a first-rate quality in any grape—he thinks the Martha can't be beat.

PREMIUM VEGETABLES.—In our March No., the fine Vegetables noticed as being raised on the farm of B. M. Bacon, "Indianapolis," should have been *Lafayette*, Ind.

CORRECTION.—It was Samuel Feast, Sr., of Baltimore, whose death it was intended to record last month; not S. F., Jr., as there stated.

BOOKS, CATALOGUES, &C.

A Curious old Book.—Every one conversant with English Horticultural History, has heard of Parkinson, but very few know him personally, through his works. A Philadelphia lady, Miss Elizabeth Fisher, has placed on our table a very perfect edition of his "*Paradisus Terrestris*, published in 1629, and dedicated "in all humble devotion to the Queen's most excellent Magestie," Elizabeth ; whom, we judge by the introduction, to have been like the present English Queen, a zealous patron of gardening.

The courteous reader is informed that it was only the ignorance of the heathen, which attributed the first knowledge of herbs and physic to Chiron the Centaur, or to Apollo, or Esculapius. Christians know better than this, for they know that the first men successively, from Adam to Noah, had an inspired knowledge of all natural things, so as to know instinctively what things were fit to use or not. The reader is also told that the author had been traduced by jealous contemporaries, who, "through an evil disposition and ignorance, have so far traduced me as to say this was another man's work, rather than mine own." He proposes to get out another work by "mine own study, if malevolent spirits do not hinder." As nothing had yet appeared but translations of the latin, except Gerard's Herbal, he thinks he may usefully occupy the ground.

The frontispiece gives a view of the Garden of Eden. Adam looks the picture of happiness, apparently calling to Eve to look at a tremendous pear he has just gathered from a young tree double his own size ; but Eve is too much occupied in picking strawberries, either because she does not care for him and his pear, or because she fears the chicken alongside the strawberry will get it before her. It may interest our vignerons to know that the grape fever did not exist in Paradise ; for, though the fruit hang from the trees in the greatest profusion, our first gardeners (for there are two of them, although we generally give that honor to Adam alone) don't seem to care a picayune about them. There are no thistles anywhere to be seen ; but we don't know but we should prefer even the vile Canada variety, to the horrid looking cactuses, whose terrible thorns seem rather in too close a proximity to the naked Adam to be pleasing. We speak feelingly on this point, having had to spend many an hour of our days in pulling out the little barbs, which, in spite of thick clothing, proved as severe thorns in one's flesh, as the most zealous ascetic could desire. Having given our readers a glimpse of Paradise, according to Parkinson, we have given them almost all the novelty of the work ; for it is a remarkable fact that many of the new notions in gardening, on which we of the present day so pride ourselves, were well known to these authors, so many years ago. The garden plans are very much like those designed by Nesfield for the present grand gardens at Chiswick, near London, and except that what we call "exotics," are familiarly called "outlandish" flowers, there has not been much change, even in garden terms.—The plates of vegetables, except in the pictorial excellence of the plates, we might suppose were from Fearing Burr. Cauliflower, Broccoli, Kohl Rabi, and Cabbage, which, our author says, "is much used of Dutchmen," even as in our day. That "doctors differ," seems also to have been as well known in those times as in ours, for Parkinson tells us "it is thought the use of cabbage doth dry up the milke in nurse's breasts ; but many women that have given sucke, to my knowledge, have denied the assertion, affirming that they have eaten them and found no such effect ; so differing are the opinions of many."

Catalogue of Washburn & Co. — We have often had occasion to remark that our Nursery and Seed Catalogues are, as a rule, far ahead in accuracy and general merits, of any in Europe. In this case before us, America has outdone herself. The typographical execution is not only excellent, and its rules, directions, and descriptions good, but it is beautifully bound, and makes really a handsome ornament for a drawing room table. We are glad to see such enterprise. It deserves to pay handsomely, and we believe it will.

The Southern Cultivator. Published by W. & W. L. Jones, Athens, Ga.

No. 4 of this monthly magazine comes to us in a neat blue cover, and fine white paper,—a very pleasant relief from the coarse gray in which it has had to clothe itself since the death of the rebellion. No class has felt the evils of the times past so much as the cultivators of the soil. Different parts of the Union have business relations,

and there are political relations ; but, in addition to these, there is, in the pursuits of agriculture and horticulture, a social relation, which seems to make those who follow them, in a sense, personally related.

Now that the *Cultivator* comes to us "like unto other" of our exchanges, we feel that the agricultural classes of the late warring circles are practically reconstructed ; and we rejoice heartily at the event.

Twenty-six years of life have made the virtues of the *Cultivator* so well known, that it is like painting the rainbow to say anything in its praise. There is talent enough in it for two papers—and, we say it with pleasure, much of the sectional bitterness which characterized it during the year succeeding the end of rebellion has disappeared, and it now confines itself to its legitimate sphere —an able watchfulnes over the agricultural prosperity of the South.

NEW AND RARE FRUITS.

Apple, Morrison's Red.—The following description is from the *American Journal of Horticulture*, page 156, but no author's name is given as a guarantee of its distinctness :

"Fruit medium size, conical, somewhat angular; color light yellow on shady side and about the eye, but striped and marbled with red ; exposed specimens nearly all red, with russet specks or dots, and russet about the stem and calyx ; calyx closed in a moderately deep basin, sometimes plaited slightly ; segments partially reflex; stem short and small, set in a regular cavity of moderate depth ; flesh white, fine-grained, tender, with a peculiar and very pleasant sub-acid flavor ; core rather large, and filled with large, dark brown seeds. Season, November to March or April. Keeps well. Tree a good grower, and very productive. This apple, for beauty, will rank among the winter fruit very much as the Williams does among the summer apples, though the color of the former is not quite so brilliant as that of the latter.

Originated at Medfield, Mass."

New Apple, Hamilton.—The following description appears in the *Journal of Horticulture*, on whose authority is not stated, but probably Dr. Warder's :

"Introduced from the South into Southern Illinois by J. A. Crain, of Pulaski Co., Illinois, and exhibited before the State Horticultural Society at South Pass, Sept. 3d, 1867. In many particulars this fruit resembles the Buckingham, which is extensively cultivated in that region ; but Mr. Crain reports the tree as different, and that the period of ripening is later.

Fruit large, roundish, irregular, somewhat ribbed : surface smooth, mixed dark red and yellow, splashed with purple ; dots large, scattered, yellow ; basin deep, abrupt, folded ; eye large, open ; cavity deep, wavy, brown ; stem medium to long, knobby ; core medium, regular, open. clasping the eye ; seeds numerous, plump, dark ; flesh yellow, breaking, rather juicy ; flavor subacid. Uses, market and family ; season, September and October."

Davison's Thornless Raspberry.— Mr. Bartholomew shows us some canes of this variety. They are very strong and thornless, which will be of great advantage to large growers, with whom the usual "nasty stickers" are a serious impediment to a rapid gathering of the crop. It is a relative of the common Black Cap, and is said to be a few days earlier than the "Doolittle."

Hybrid Grapes.—In one of our earlier volumes we gave a highly interesting account of some hybrid fruit by Dr. A. P. Wylie, of Chester, South Carolina. Fortunately for Science, Dr. W. has continued his experiments all through the rebellion, and has now gathered together an immense amount of valuable facts, some of which in the following notes we have much pleasure in giving to our readers :

"In 1859 I grafted an old wild Æstivalis grape with the White Frontignac. The graft was put in late in the spring, consequently did not bloom (it bore two branches) until late, about the time that the Scuppernong or Bullace bloomed. So soon as the first blooms commenced bursting, I clipped them all off, (those about to be blown), and then carefully cut away the stamens of all those not so far advanced as to be lifting the cap;

by this means preventing the possibility of self-impregnation. I then carefully covered the bunch with paper, so as to prevent the possibility of the wind or insects carrying pollen to the hybridized bunch.

On two successive mornings I applied pollen of Scuppernong and Bullace mixed. My reason for mixing the pollen was, that I could only procure a small quantity of Scuppernong pollen, from a distance, and the Bullace was plenty, and at hand. Owing to an accident I only saved a few seed. These were put in a phial of sand and buried until spring, and then carefully planted and marked. Several came up, but some of them appeared feeble—never grew much, and were finally lost. One grew well, which I inarched when a few inches high. This grew strong, and bloomed in 1860. Unfortuately, this proved a male (staminate) plant.

In 1860 I impregnated a bunch of Black Hamburgh with Scuppernong and Bullace pollen, grafted on the same wild vine. Saved about a dozen seed, which I planted in a hotbed in the spring of 1861. Five plants came up, which I inarched on the shoots of stocks which had been cut off for the purpose. They all grew off finely, each differing somewhat in the leaf, but all having the same smooth, hard wood and smooth leaf of the Scuppernong.

In the spring of 1862 I was delighted to see all those five plants blooming. Two of them proved male (staminate), and three appeared to have perfect hermaphrodite flowers. You may imagine my gratification at seeing those flowers preparing to fruit, which had been so much admired by all who had seen them, for their vigor, health and beauty, and distinct appearance.

Two of those which had perfect flowers soon dropt their blooms and set no fruit; the other set a full crop, the bunches each having from twenty or thirty grapes; they grew until about the size of a duck shot, and then all dropt.

On examining some of the later blooms, I could discover no pollen. I think the chief defect was the want of pollen, as I took some pollen from a neighboring grape vine and applied to a bunch, which produced a few berries with a thick, dark skin, and a high musky flavor, proving clearly that the defect was in the pollen. Although growing in stiff pipe clay, those vines grew most vigorously, and were entirely exempt from all disease—even more vigorous in this soil than Scuppernong. The Scuppernong and White Frontignac hybrid is not as healthy and vigorous as the Black Hamburgh and Scuppernong hybrids.

Failing entirely in producing fruit from those six plants, I then (1862) concluded to try impregnating the foreign grape with pollen from my staminate hybrid Scuppernongs, as they appeared to be perfect staminates containing powdery pollen.

I had a White Muscat of Alexandria growing near a south wall, which bloomed very late. I prepared and impregnated a bunch of it with the hybrid Scuppernong pollen; it appeared to take. I saved a few seed, planted and labeled them with the utmost care. They came up, but all were lost except two, which I inarched. They grew off; one of them resembled the Scuppernong very much, both in wood and foliage. It certainly was one of the most remarkable and beautiful vines I ever saw. The foliage of the other not resembling the Scuppernong, I cut it off from its inarching, dug it up in midsummer, and planted it rather carelessly in another place so as to let the sap all go to the other vine, as I feared that the one I removed was merely a seedling Muscat Alexandria. The removing this vine which I separated from its inarching, and replanting it in midsummer very nearly destroyed it; but in the course of the next year it rallied, and clearly showed, from its slender, wiry wood, its Scuppernong parentage; and, although it had been badly treated, grew off rapidly, and, last year (1866) for the first, had a few blooms.

Not taking into consideration its Scuppernong parentage, I cut it back, each year, as other vines, and, last winter, by this means, cut off nearly all of its fruit buds. I trimmed it close so as to get its wood for propagating. From some cause, it dropped nearly all of its leaves in June, before its fruit was half grown.

My ground is a stiff yellow clay, which cracks widely in dry weather. I underdrained it with some wooden poles, about two feet below the vines, in a trench. As it was badly done, it is probably the drain is blocked up; and, as it has been an extremely wet summer, it is probable that the roots have been in water most of the summer.

There was some mildew on the leaves, but not enough to cause it to drop its leaves. The bunches were small, not containing over thirty or forty berries. Size medium, or between the size of a Lenoir and Catawba. Color, when ripe, dark reddish; flavor rich, musky, and, I think, hard to excel, being what you might imagine from

commingling of Scuppernong and Muscat Alexandria, or White Frontignac: and, what is remarkable, its fruit ripens one or two berries on a bunch at a time—so that some were perfectly green and others ripe.

I went out to see if I could not find a few berries to send you, but could find none worth sending. I enclose a few berries, which are green and appeared to be shrivelling, as they were exposed to the sun without leaves,—they are a little below the average size. I send them particularly, for you to notice one thing peculiar, and showing their hybrid origin, which is, that they have no seed: they all have the ligneous receptacle but no germ.

The parentage of this vine being chiefly from tender foreign varieties, may render it of little or no value to cultivate; but I attach great importance to it as establishing the important fact, that a prolific hybrid Scuppernong can be produced by using the pollen from my staminate hybrid Scuppernongs. I attempted, this spring, to impregnate the Scuppernong, and also the Flowers grape (a late valuable variety of Bullace) with my staminate hybrid Scuppernong; but, notwithstanding I adopted *every precaution* to insure success, and had at least a dozen bunches prepared and the pollen applied, one has taken—at least I discover but one grape among the numerous bunches tried. I think I have pretty well established the following facts in hybridizing the Scuppernong, viz.:

1st. That you cannot impregnate the Scuppernong with pollen from any other grape, either native or foreign; as I have repeatedly attempted to impregnate the Scuppernong with both native and foreign, and in every instance failed; also, as I stated above, failed to impregnate Scuppernong with pollen from staminate hybrid Scuppernong.

2nd. That you can impregnate the foreign with Scuppernong (Bullace) pollen, as I have *undoubtedly* established.

3rd. That you cannot impregnate either Labrusca or Æstivalis, with Scuppernong pollen; I have tried the experiment several times and failed.

4th. That you can impregnate both native and foreign with hybrid (staminate) Scuppernong pollen.

5th. That you cannot impregnate Scuppernong with hybrid (staminate) Scuppernong.

I impregnated a few blooms of Herbemont with staminate hybrid Scuppernong last year, (1866) and saved eleven seed, ten of which came up this spring (early) in a propagating (or small greenhouse) house, no two of the plants were exactly alike, but all showed their Scuppernong parentage; owing to the house getting overheated, (by neglect) the plants all came very nearly being destroyed and all stunted and crippled, except one which is ten feet long, with numerous branches and fruit buds; this was inarched on a strong stock. The foliage somewhat resembles the Herbemont, but the wood is slender and wiry, like the Scuppernong. I hope to have fruit from it next season.

I have used the pollen this season, both from the White Frontignac and Black Hamburg Hybrid Scuppernongs, and will have seed of Delaware, Herbemont, Lenoir and Bland Maderia Hybrid, No. 1, (a most remarkable grape, equally as large as Clinton Hybrid, No. 1, much more beautiful, being yellow in color, with beautiful carmine stripes.)

The seed of all of them, except the latter, (which ripens in October) are gathered, labeled and put away in phials of brick dust for spring planting. So, you see that I have gone pretty extensively into hybridizing with my Hybrid Scuppernong.

There is a difficulty in experimenting with the Scuppernong, as it blooms so late, at least a month after some kinds. The hybrid Scuppernongs also bloom late, but not later than Herbemont and some other late kinds. I have all of the fine foreign grapes, growing in pots in a rude greenhouse, in which I can apply heat. I have, this summer, put one of my staminate hybrid Scuppernongs in a pot, so that I can force it to bloom with the foreign; by which means I can hybridize extensively next spring. Although my time is limited, and health not good, I have contracted such an intense interest in these experiments, that I expect to cotinue it the remainder of my days.

I produced Clinton hybrids with Black Hamburgh, White Muscat Alexandria, Syrian, and others, last year (1866), and have some of them inarched, one of which is about an inch in diameter at the roots, with numerous branches. With proper precautions in inarching seedlings, it is an easy matter to make a seedling bear in one year from the seed, instead of waiting three or four.

The Clinton hybrids show a rare exemption from mildew. Still, I have had three of them to mildew this summer.

The one (Clinton hybrid No. 1) that bore the specimen which I sent you, did mildew slightly, but not until the fruit was almost ripe. But the locality is most abominable, and the season one of the most unfavorable that we have had for years. I have, this season, parcels of seed of Clinton impregnated with the following: Bowood Muscat, White Muscat of Alexandria, Muscat Hamburgh, Lady Downe's Seedling, Foster's Seedling, Black Prince.

I have a parcel of Delaware, impregnated with Clinton, and also Delaware and Concord, each impregnated with pollen from Clinton hybrid No. 1.

I have never seen mildew on the Frost Grape, (Cordifolia), therefore think it may make a fine basis for hybridizing. I have one plant which is very peculiar—of Royal Muscadine, impregnated with Frost, and some forty or fifty of Black September (*A.* cordifolia), impregnated with foreign.

Do you consider the Clinton a Cordifolia? I notice that some call it an Æstivalis. Will you be so kind as to inform me about the Clinton hybrids of those two gentlemen you spoke of as having hybridized the Clinton. I would like to know the varieties of foreign impregnated, or from which the pollen was taken and results, and particularly if exempt from mildew and rot.

So far as my experience goes, wherever the foliage resembles closely the foreign, they are liable to mildew, and if the leaves are *thin*, liable to fire blight. I inarched two seedlings this season; one Clinton, impregnated with Syrian, the other Clinton with White Muscat Alexandria; on a strong stock near the drain from a stable, almost in a bank of manure, both are growing and have numerous fruit buds; the first has not mildewed in the slightest degree; the second has mildewed considerably; the foliage of the two differ widely, but neither resemble the Clinton in the slightest degree. I have this season twenty-six parcels of hybrid seed, each a different kind, produced by impregnating native and foreign; native and native; hybrids and hybrids, &c., &c.

With the experience I have had, I can now hybridize with some definite idea of the result, except where we cross hybrids with hybrids, and then there appears to be no end to the sporting. One of the most *vigorous*, *healthy* vines, with fruit of the finest flavor, or *certainly as fine* as I ever tasted, either native or foreign, is a white or yellow fruit, whereas its parents bore one a black and the other a dark red fruit. Two seedlings of the same crop have no resemblance, either in wood, foliage or fruit,—one bearing a globular black fruit, of third rate quality, and the other an oblong blue fruit of very inferior quality. The leaf of the first bears no resemblance to the foreign, not being serrated, and thick, and leathery in texture.

I have some eighty seedlings produced by impregnating the Halifax (a heavy leaved Labrusca) with Delaware, all of bearing size, and nearly all bore this summer, which, for *vigor*, *health* and exemption from mildew and rot, cannot be exceeded by any known varieties which are worth cultivating.

Enclosed you will see the report of Dr. L. Berckman and Mr. Ravenal.

LOUDON PIPPIN APPLE.—*Mr. Oliver Taylor, Evergreen Home, Virginia*, says: A few days since I took another survey of the original Loudon Pippin Apple tree, so I write to thee to see if it has its equal anywhere now known to man. It has been in bearing for 80 years; and they who knew it 80 years ago, report it to have been an old tree then, and it has not been known to fail bearing, each year, either 45 or 75 bushels of apples, of the fine size and quality they now possess.

Until two years ago, not a limb on it showed decay, but, spreading about 45 feet, and rising about 45 feet, it was as fine a specimen as could be imagined. Now, one large branch has broken its symmetry by its absence. No doubt can exist but that this tree has borne at the rate of 50 bushels per year on the average for 100 years past, of first quality apples. All who eat them here in their prime, pronounce them first rate; and it is doubtful if the quality can be surpassed by any apple of the Pippin class.

If any tree can excel this I should be glad of an account through the *Monthly*.

THE RICHARDSON PEAR.—The Alton Hort-Society find the Richardson Pear was imported from England to Pomfret, Conn., and there called the August pear. From Pomfret, Conn., in the year 1779, scions were taken to Cornish, N. H., and grafted on seedling pear stocks, only one of which grew, on the farm of a gentleman by the name of Richardson. From this tree scions were taken by Mr. A. A. Hillard, of Brighton, and brought west.

DOMESTIC INTELLIGENCE.

GRAPES BEFORE THE PA. HORT. SOCIETY.—Mr. Knox exhibited a fine collection in October, of some of the least generally known. We give the following descriptions from the pen of Gen. Negley:

Adirondac—Growth slow, badly affected with mildew; one of the least promising in both vine and fruit.

Iona—Enamored with the pen-pictures of this variety, I anticipated seeing a vine of unusual vigor, with fruit surpassing all the older kinds. In both these essentials I was disappointed. It was very liable to mildew, though of stronger growth than the Delaware; bunches of medium size; ripens late; not uniformly better than a prime Catawba.

Israella—This is another variety which Mr. Knox should muster out of service. It is not equal to the Creveling in flavor, or so productive as the Hartford; ripens later than either.

Maxatawney—Bunches medium, compact, not shouldered; earlier than the Anna. Berries tender, without pulp, sweet and juicy; color a light greenish yellow flushed with amber, scarcely equal to the Rebecca in quality, but a more vigorous grower, and worthier of general cultivation.

Allen's Hybrid—A sweet, delicious white grape, liable to mildew, and not sufficiently hardy for exposed situations.

Cuyahoga—Greenish white, worthless.

Martha—Truly a white Concord, fully equal to its parent in hardihood, fruitfulness and vigorous growth; foliage of a deeper green, more enduring, bunch below the Concord in size; berries nearly equal to it; color a transparent greenish-white, with a golden tint; skin thin, flesh juicy and sweet, with a little of the aroma of the Concord. It is a superb and highly attractive white grape, one that promises to bestow credit upon the skill and enterprise of its introducer to public favor.

Ives.—I am agreeably disappointed in the characteristics of this variety. The fruit is large; earlier than the Concord; juice rich, and, to many, palatable; vine robust, hardy and productive; promises to be a valuable wine grape.

Alvey.—Vigorous grower though not as robust as the Concord; foliage luxuriant and enduring vine productive; bunches and fruit below medium but larger than the Clinton, which it resembles in color; fruit ripens uniformly in the season of the Concord; flesh juicy, vinous, melting, delicious; when expressed has a beautiful magenta tint. The Alvey has commendable qualities either for the table or wine. For the latter purpose it will soon become a favorite.

THE REDWOOD TREES OF CALIFORNIA.—At a recent scientific meeting at San Francisco, Dr. Gibbons, of Alameda, referred to the extinct forest of Redwood on the coast range, near San Antonio. He directed attention to the fact that some of those stumps indicated a method of growth different from ordinary forest trees.—Their immense size was due, in some cases, to the fact that three or four trees, growing in proximity, would ultimately impinge on each other, and, if supplied with sufficient nourishment, they would grow together and form one immense trunk.

This theory was verified by the statements of Dr. Kellogg and Mr. Bolander, who mentioned the fact that, near Searsville, several Redwood trunks had grown together and, for forty feet, formed a solid tree. There is no dependence in estimating the age of such trees in any other way than by carefully counting the number of concentric growths from a centre. The oldest of these redwoods is about fifteen hundred years of age.

THE SALIX BABYLONICA is generally planted by a still pool of water, to which it is a beautiful and appropriate ornament; and when, in misty weather, drops of water are seen distilling from the extremities of its branches, nothing can be more descriptive than the title it has obtained of Weeping Willow.

"Thus o'er our streams do eastern willows lean
In pensive guise, whose grief-inspiring shape
Love has to melancholy sacred made."

Ovid gives a very good description of the situation in which willows generally grow:

"A hollow vale, where watery torrents gush,
Sinks in the plain; the osier and the rush,
The marshy sedge and bending willow, nod
Their trailing foliage o'er the oozy sod.

Among the British poets who have sung of this plant, most have alluded to the willow being considered the emblem of despairing love. Herrick says:

"A willow garland thou didst send,
  Perfumed, last day to me,
Which did but only this portend,
  I was forsook by thee.
Since so it is, I'll tell thee what,
  To-morrow thou shalt see
Me wear the willow—after that
  To die upon the tree."

And Spenser calls the tree

"The willow worn by forlorn paramour."

Shakespeare thus represents Dido lamenting the loss of Æneas:

——"In such a night
Stood Dido, with a willow in her hand,
Upon the wild sea banks, and waved her love
To come again to Carthage."

And, again, in relating the death of Ophelia:

"There is a willow grows ascant the brook
That shows his hoar leaves in the glassy stream:
Therewith fantastic garlands did she make,
Of crow-flowers, nettles, daisies and long purples.
There, on the pendant boughs, her cornet weeds,
Clambering to hang, an envious sliver broke;
When, down, her weedy trophies and herself
Fell on the weeping brook."

Cowper says:

"We pass a gulf in which the willows dip
Their pendant boughs, stooping as if to drink."

Montgomery has also alluded to it:

"Odors abroad the wind of morning breathe,
And, fresh with dew, the herbage sprang beneath;
Down from the hills that gently sloped away
To the broad river shining into day
They passed: along the brink the path they kept,
Where high aloof o'er-arching willows wept,
Whose silvery foliage glistened in the beam,
And floating shadows fringed the chequered stream."

LATE APPLES FOR SOUTHERN ILLINOIS.—Judge Brown, at a recent meeting of the Southern Illinois Fruit Growers' Society, stated that he had come to the conclusion that the great want of the "Egyptian" region was late-keeping apples, and Dr. Crane, having the same views, had introduced some new apples, on the table, from the South where they were highly esteemed. He then explained the merits of a few, as follows;

"*Holmann*"—This was supposed to be the Nickajack, and was well recommended as a late apple.

N. C. Pippin.—This was called by Dr. Warder the "Rock Island," though not described in his book. Well recommended as a late keeper.

Baccalinus—Not fit to eat till April and May; of good quality; great bearer but small.

Spark's—Very large and fine, color red.

Terrall's Late.—Excellent quality; large size; very productive and a good bearer: color red and white.

Seedlings—He also spoke of two seedlings, known to be good keepers, one raised by Mr. Mc Lellan, which was small, red, and often produced 23 bushels to the tree; the other raised by Dr. Crane and also very good.—*Prairie Farmer.*

NURSERY FIRM AT DANVILLE, N. Y.—H. Southwick & Son and T. T. Southwick are the same firm. Correspondents can save stamps by observing this.

APPLES IN ILLINOIS.—A discussion at Alton, (Ills.) Horticultural Society named the following as good early apples for that section: Early Harvest, Red Astrachan, Red June, Sops of Wine, Maiden's Blush.

CHANGES IN THE EARTH'S FLORA.—The European fossils at a very remote period were formed of trees that are now characteristic of Asia and America; these have been driven out by the Northern and Eastern floras, which, however, did not reach the islands in such force or numbers and thus spared these living witnesses. Just as white races drive the savages before them, and who, in like manner, take shelter in remote islands. The configuration of land, both continents and islands, was, of course, very different at that time.—*N. S. Jour. of Ag.*

FORESTS OF CALIFORNIA.—No other State in the Union presents such a diversity of aspects as regards its forests. The southern plain lands of the State have no trees whatever, except the few which grow in the channels of the creeks and rivers.

In Central California there are no dense forests, except upon the Sierra Nevada and coast mountains. but the low hills and the valleys were originally covered with scattering trees. They were mostly of the wide-spreading oak, the laurel, and the sycamore. Twenty years ago the valleys and slopes in the central part of the State were vast parks, the trees standing so far apart as never to interweave their ample boughs. They were of sweeping breadth, but of moderate altitude. For lumber and building purposes they are wholly worthless. The farmers have cut down many of them, but enough are left to make beautiful the hill-sides and lawns of this most productive section of the State.—*Daily Paper.*

OIL LAMP HOT WATER TANK.—At a recent meeting of Chicago Gardeners, Mr. Scott described a tank got up by Mr. Kittoe, of Galena, for use in the window of the house, and adapted to the masses, where they have not room for a hot-bed, or access to a green-house. It was to construct a pan of any suitable size to contain water, it being covered with slate stone on which earth is placed. The heating is accomplished with a kerosene lamp with a tin chimney, made double, so the water circulates all around it, this connected with the pan or tank by two small tubes or pipes; the water on the tank is thus heated as desired; the tank can be made of any size, and used for starting of all tender plants and flower seeds, striking cuttings, &c.

CANADA THISTLES WEST.—We made faces at our good brother *Agriculturist*, for saying the Canada Thistle was "everywhere west," and he squares off at our naughtiness by saying we did not go "everywhere," but only "somewhere" west. We were about to "fight it out on this line," when the *Prairie Farmer* steps in as Peacemaker, in this way:

"Both wrong gentlemen. We have got the *real vile thing* at the West, though not everywhere "all along the lines of railroad." But there are enough of them to cause alarm in many neighborhoods and enough to call forth some appeals to Legislation that shall look to their eradication. They may be seen in too great abundance along some of the railways lines of the West."

HARDINESS OF DIANA HAMBURG GRAPE.—Dr. S. J. Parker, says in the *Country Gentleman*, that "It is false that the Diana Hamburg is not hardy." He has had Black Hamburg when preserved from sun in winter, endure 14° below zero without injury, and is prepared to prove that under similar circumstances, a Diana Hamburg is as hardy as the Black Hamburg.

PEACHES FOR ILLINOIS.—The Quincy Hort. Society recommends the following list as best for that part of the world: Hale's Early, Early Tillotson, Troth's Early, Large Early York, Jaques' Rareripe, Oldmixon Free, Oldmixon Cling, Hayworth, Morris' White, Stump the World, Smock's Late, Ward's Late, Heath Cling.

APPLES FOR WISCONSIN.—It is necessary to have very hardy varieties for Wisconsin. The Editor of *W. Farmer*, gives the following as a good selection for that climate:

SUMMER.—Red Astrachan, 5; Sops of Wine, 2; Early Joe, 1; Sweet June, 1; White Juneating, 1. Total 10.

FALL.—Duchess Oldenburg, 3; Autumn Strawberry, 2; St. Lawrence, 5; Plumb's Cider, 5; Drap D'Or, 3; Fall Orange, 2. Total 20.

WINTER.—Fameuse, 20; Westfield Seeknofurther, 10; Tallman Sweet, 5; Baily Sweet, 5; Blue Pearmain, 2; Golden Russet, 15; Belleflower, 2; Red Romanite, 2; Rawle's Jeanette, 5; Pomme Grise, 2; Northern Spy, 2. Total 70.

FOREIGN INTELLIGENCE.

FRUIT GROWING IN FRANCE.—A correspondent of the *London Journal of Horticulture* says: "It is a notable fact that every Frenchman eats at least a bushel of fruit a year. An apple, pear, bunch of grapes, or a handful of cherries, is eaten daily by every subject of Napoleon III. This 365 lots of fruit multiplied by the millions of population, necessarily gives a total prodigious in itself, apart from the immense quantity sent abroad to England, Denmark, Russia, Sweden, and other colder climates.

Many of my men make as much as 400 francs a year from their little gardens of fruit, after supplying their own family. This is clear profit, and costs them nothing but labor.

No country can boast of private gardens like Great Britain; but for peoples' gardens, or the great fruit-producing gardens, I give the palm to France. Go where you will, in France, you see pyramid Pear trees, even in the most unlikely nooks, around poor little houses.

Every Frenchman loves a fruit tree, and will have it, too, let him live where he may. If in a town, he will still persist in growing his fruit tree, even in a tub or other vessel. This practice is quite common in quaint old towns, and probably it was this fashion that first suggested the idea of an orchard house.

Grafting on the Quince stock has been practised in France for two hundred years. This fact proves that the French have been fully alive to the question of Pear production and culture for a much longer period than the English, or than is generally supposed.

ETYMOLOGY OF THE WORD "WEED."—Considering that weeds are found in every part of the inhabited world, it is singular that so few languages have a full equivalent of the term 'weed,' and that so useful an idea as that popularly embodied in it, should not have been, long ere this, translated into science. The Latin "*herba*," or Spanish "*yierba*," certainly does include our "weed;" but whilst every weed is an herb, not every herb is a weed.

What, then, is the real meaning of "weed"? Dictionary writers do not help us much by qualifying weed as a mean or troublesome herb, for the popular mind associates with the nature of a weed several other characteristics not mentioned by them. We talk of plants bearing "a weedy look," and though most of us know what that means, nobody has, as yet, made it clear to those who do not know.

The term *weedy* would be misapplied to the Aloes, but fit exactly the generality of the Alsinæ. We would never say of the Heather that it had a weedy look; in fact, the term would never suggest itself in connection with that species. The vegetation of New Holland could not be described, speaking generally, as bearing a weedy look, whilst that of the lower coast region of most tropical countries could scarcely be better defined than by that phrase. One of the most essential characteristics of a weed is, therefore, that it should look weedy, or, in other words, that its stem and foliage should be neither too fleshy nor too leathery, but of a soft, flaccid, or membraneous description.

Another important characteristic is, that an herb, to be considered a weed, should propagate itself, either by seeds or buds, at a rapid rate, grow fast, and overpower those plants which may check its progress. I take it to be, that those characteristics are emphatically conveyed in the etymology ot the word "weed," which, through the low German verb "*wuen*" (to weed), the Bavarian "*wuteln*," and the high German "*wuchern*" (= to spread or multiply with more than ordinary rapidity,) as connected with Wodan or Wuotan (=Odin), the name of the supreme, all-over-powering, irresistible Saxon god, to whom Wednesday or Wodenesday is dedicated.

A third, and perhaps more important, characteristic is, that a weed appears only on land which, either by cultivation or in some other manner, has been disturbed by man. Virgin lands, such as the tops of high mountains, have no weeds. I saw none in the Arctic regions, except Tetrapoma pyriforme, a Siberian immigrant, which was growing in Norton Sound, on the only cultivated patch I met with in that country. Weeds are, therefore, essentially intruders, colonists, foreigners, or whatever one likes to call them—never endemic children of the soil. They may have come from the immediate neighborhood, but they have always been translated, though the distance may have been but limited. Weeds have, therefore, to bear up against all the prejudice which the popular mind in all countries invariably entertains against foreigners.

The German contemptuouly terms weed "*Unkraut*," which is the antithesis of *Kraut* (=Herb), and means "no herb," or "strange herb," just as *Ding* (=thing), is the antithesis of *Unding*, a=strange thing or monster); thus clearly expressing that weeds do not belong to the herbs of the country, but are something strange, unrecognised.

Sometimes national prejudices are pointedly expressed in the popular names given to newly-imported weeds. Thus, the North American Indian names Plantago major the "Footsteps of the White Man;" and the German, the troublesome Peruvian Galinsoga parviflora, "Frenchman's Weed," though the French are, probably, quite innocent of its having become a pest in the sandy districts of Prussia and adjacent States.—Dr. B. Seeman.

Vine Border Making.—A gardener correspondent of the *London Journal of Horticulture*, ridicules expensive borders. An amateur having built his house stuck fast at border making. Here his perplexities began, for on reverting to the back numbers of the Journal, and attentively reading up all which had any bearing on the case, he became positively bewildered. What with opposing schemes, conflicting practices, apparently irreconcileable statements and processes, was it not enough to damp the ardor of an enthusiast thirsting for knowledge? His diminished balance at the bankers, began to haunt him; In his perplexity he came to me. Much was made plain to him, much remained still in doubt; however, every point was discussed, and it was ultimately decided that for an outside border 2½ feet deep would be ample, 1½ foot below, and one foot above the general level of the ground. Half the length of the border was excavated; the bottom was laid with flat tiles drawn with mortar and cement, and with a slope towards the front, and a few inches of broken stones were placed on the tiles. Turf about three inches thick, rather light than heavy, was procured and mixed in with about one-sixth of old mortar rubbish, and a liberal blackening of soot, perhaps about one-twentieth of the entire bulk; no bones being used in this, but reserved for the other half of the border, which will be finished at a future time. This depth of border, all alike good, and to be enriched with top-dressings when occasion may require, is capable of growing good Black Hamburgh Grapes.

The Gardener's Monthly.

DEVOTED TO

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EDITED BY THOMAS MEEHAN.

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HINTS FOR JUNE.

FLOWER GARDEN AND PLEASURE GROUND.

The first week in May finds us writing out "Hints for June;" but when we look out of our library window and see the "weather and the crops," we can scarcely believe there is not some mistake in the month, in our latitude, at least. It so very common to hear people say, of each season, that "they never saw anything like it before," that we have looked on these things like many people look on ghosts, as something only a very few people can see. But there is no myth this time. That Lilac bush, which now has not a leaf, not only had leaves, but always flowers in full bloom, by the first of May. Parties "out a-Maying" on the first, have begged many a bunch from it; but, alas! now there is not even a sign. Then, what is the use of writing Hints for June, when not even the May-tide has come? Has our climate really changed?

Perhaps, after all, there is something in the much-talked of laws of Progressive development, only our case is more than a progressive one. The geologist tells us it takes millions of years for a change gradually to run out its full course. What an immense change will have to come hereabouts at the rate of this spring.

Not only our spring, but our winter puzzled us. Do you know, reader, we had Hemlocks killed as if they had been Australian plants. Our bed of Rhododendrons is nothing but a dry brush heap ready for the torch. American Arborvitæs, especially the Hovey variety, have been cut to the ground; and misery and wretchedness find a home amongst the whole Arborvitæ and Spruce kinds.

In the midst of our desolation, however, it is pleasant to know that some of our readers are having a real May time; and this encourages us to write our regular monthly work. Far away in the Northwest our advices are fresh with a sweet spring fragrance; and, no doubt, further away to the North Pole, the summer breezes blow. We shall therefore write what ought to be written; and if any of our readers get hold of our ideas in climates or places where they cannot be applied, let them blame the fates and not their humble friend.

As a few of the most practical things, which will likely require attention everywhere, we may say that all those who have set out trees the past spring, should take the first chance of a dry spell to loosen the soil deeply about them with a fork, and, immediately after, beat it down hard again with the heel, or some better "clod crusher." Innumerable lives of trees may be saved by this simple practice.

Good walks are the most striking features of a well kept garden. Weeds should be taken in time, and the labor of keeping them down will be very slight. The edges or 'verges' should be trimmed at every mowing of the grass-bordering; for which purpose a common sheep-shear, or grass-edging shears, made specially for the purpose, and sold at most horticultural stores should be kept on hand. Washing by heavy rains should be guarded against; or, when so injured, speedily repaired.

After the walks and lawns, the flower-beds should be a constant source of attention. If the plants appear to suffer by drouth, there is no better remedy than to place a fork around the plant and loosen up the soil deeply, without disturbing the plant more than can be avoided. After being thus loosened, it will not dry out near as much as before. Above all, keep the surface continually broken by hoeing and raking fine. Nothing is so sure a preventive of soil-drying as a loose, porous texture.

Mow lawns often if you would have them green and velvety. Keep the scythe sharp; usually, mowers do not use the grindstone often enough. Common farm scythes are not fit for lawn use; rivetted and short scythes are the kind to get.

IRREGULAR PAGINATION

If a lawn is mowed often, the grass need not be raked clean—the sappy blades soon wither, and make a manure for the roots. The longest should be raked off, or the lawn will have a littery appearance.

Evergreen hedges will require attention as they grow. Where the height desired has been attained, the top and strong growth should be cut back while they are still watery. The side shoots need not be touched till past midsummer. All wise people now employ the conical shape for hedges. In cutting back the top growth at this season, the conical form can still be preserved.

Cut off the flowers of roses as they fade,—the second crop will be much better for the attention. Seeds of all flowering plants should be also taken off; all this assists the duration of the blooming season.

Propagation by layering may be performed any time when strong, vigorous growing shoots can be had. Any plant can be propagated by layers. Many can be readily propagated no other way. Cut a notch on the upper side of the shoot—not below, as all the books recommend—and bend down into, and cover with, rich soil. In a few weeks they root, and can be removed from their parent. Stakes for plants should be charred at the ends before using, when they will last for years.

No trees, Evergreens especially, should be suffered to have grass grow about them for a year or so after planting. It becomes "rank" in the deeply loosened soil, abstracts moisture, and otherwise seriously interferes with the tree.

When the tree gets a fair start, grass does less injury, and when it becomes a tough sod, and the tree, by its shade, or say by frequent mowings, keeps the grass short, the grass roots do not penetrate deep, and the sod is a benefit, by keeping the surface spongy, and the substratum cool.

What are usually considered "fine planting seasons," frequently result in a large list of dead trees. The past season has been a very wet one, and as such classed with the good times; but the evil comes in this way: in the first place, soil will only pulverize when nearly dry. If rather wet, it becomes pasty. It is only when the soil powders finely that it can be packed in closely between the crevices of the roots; for pasty earth leaves spaces all hollow, like a mould, which no art can well fill up. So, when trees are planted in this state of affairs, the fibres are not near as numerously in contact with the soil as when set in a drier time, and suffer proportionately during a summer drouth. But this is not the worst. Soil made pasty by working when wet, dries out more rapidly than a soil left in a finely pulverized state; and the effect of heavy rains is to render soils pasty on the surface, which afterwards soon parts with the moisture within it.

FRUIT GARDEN.

We trust that our readers will not forget what they have learned from the last two volumes of the *Gardener's Monthly*, that many of the diseases of plants are owing to parasitic fungi, which do not call for any previous disease of the plants to account for their existence. Also, that these parasitic fungi are plants; and, like other plants, branch out, attach themselves to other places, and grow, in fact, just like any weeds in common garden ground. But the chief thing to remember is, that we have to fight them just as we do other weeds, by hoeing them out or destroying them in infancy.

The man who sees rank vegetation grow in his garden, and then runs about wringing his hands, declaring his ground is diseased and produces as a consequence, nothing but weeds, and seeking all sorts of patent cure-alls, instead of taking off his coat, would not be pitied if he got no crops—and yet those who cry out about not being able to contend with fruit insects or fungi, are not much wiser than they.

As soon as a plum or cherry knot can be discerned swelling out, cut it away and burn it. When you see any sign of change in color on the bark of your Pear trees, cut away and burn that also. And when you see any black marks on the leaves of apple trees, livid spots on the grape foliage, or any change whatever from the normal hue, cut away and burn the whole thing. By this means shall you prevent their seeding—and thus only can you ever keep in check a scourge which is really, in some neighborhoods, a mighty obstacle to success.

So with insects; as a soldier would say, they must be attacked directly in front. Strategy is of not much use. Hand picking, tree shaking, and collecting grubs and larvæ, must be the chief reliance of the practical man. He who has not "time" to attend to these things, will have to buy his fruit of those who have. It seems hard-hearted to pronounce such a doom, but we feel it to be a truth; and the sooner all realize it the better if it must be.

VEGETABLE GARDEN.

Celery, for early use, is often planted out this month, though for winter use July or August will be early enough. It is best to set out in shallow trenches, for convenience in watering, the celery being fond of hydropathic appliances. If the ground has been deeply subsoiled, and the subsoil well enriched, the trenches may be near a foot in depth, for convenience in blanching; but beware of planting down in poor, barren subsoil. Many plant in double rows. Where very superior celery is not an object this will do,—but the single-row system is the best for excellency.

The season is now arriving when the advantages of subsoiled ground will be apparent. In such soil plants will grow freely though there be no rain for many weeks. Some of our best growers now plant entirely on the surface, and depend on drawing up the soil, or the employment of boards or other artificial methods of blanching.

Cabbage and Broccoli may still be set out for fall crops, also requiring an abundance of manure to insure success. Lettuce, where salads are in much request, may yet be sown. The Curled Indian is a favorite summer kind; but the varieties of Cos, or Plain-leaved kinds, are good; they take more trouble, having to be tied up to blanch well. Many should not be sown at a time, as they soon run to seed in hot weather.

Cucumbers, for pickling, may be sown this month, and Endive, for fall salad, set out. Parsley for winter use may be sown now in boxes of rich soil, and set in a cool, shady place till it germinates.

Peas for a fall crop may be sown. It is, however, useless to try them, unless in a deeply trenched soil, and one that is comparatively cool in the hottest weather overhead, or they will certainly mildew and prove worthless. In England, where the atmosphere is so much more humid than ours, they, nevertheless, have great difficulty in getting fall peas to get through free from mildew; and to obviate these drying and mildew-producing influences, they often plant them in deep trenches, made as for celery, and are then much more successful with them.

The Swede Turnip or Ruta Baga should be sown about the end of the month. A well-enriched piece of ground is essential, as by growing fast they get ahead of the ravages of the fly. Manures abounding in the phosphates—bone-dust, for instance,—are superior for the Turnip. Sweet Potatoes must be watched that the vines do not rot in the ground as they run, which will weaken the main crop of roots. They should be gone over about once a month, with a rake or pole, and the vines disturbed somewhat from their position.

Endive is becoming very popular as a winter salad. Now is the time to sow. The Curled-leaved is the most desirable. Sow it like Lettuce.

Asparagus-beds should not be cut after the stalks seem to come up weak, or there will be but a poor crop the next season, and the beds will "run out" in a few years.

COMMUNICATIONS.

LAYING OUT AND EMBELLISHING PLEASURE GROUNDS.

BY WALTER ELDER, PHILADELPHIA, PA.

Read before the Pa. Hort. Society, April 7th, '68.

There is often a hot haste and want of full deliberation in marking out and adopting plans for pleasure grounds, which cause many of our attempts at landscape gardening to be ridiculed, and more costly and far less comely. A draughtsman visits the place, and from a superficial view thereof makes a plan, which looks very well on paper; but may not accord well with the situations of the buildings and grades of the grounds. A good draughtsman may be a poor designer and only look at the present. A gardener may be a poor draughtsman and an expert designer and will see far into futurity. The proprietor, gardener, and draughtsman should visit the grounds together as *equals;* and each give his opinions, and all will be made more wise, if there is a liberal compliance of the parties engaged; but to imagine that a fine coat and pleasing manners impart the wisdom of Solomon to the man of the pencil, and he of the spade is an imbecile, because he is industrious and throws off his coat to dig, would be most preposterous. The gardener is constantly reading and studying the book of nature, and observing causes and effects, his counsel therefore is often valuable.

The sites, styles and erection of the edifices properly belong to architects and builders, yet the gardener's opinion may be asked about the garden buildings, as he may know how to combine convenience with economy and elegance in their construction, to lessen their cost in future management.

The avenue leading from the highway to the main building, be it a dwelling, a college or a capital, is first to be decided on, and the ways from there to the stables and where vehicles are to turn to go out again. No one plan will suit all places: that must be determined on the spot. And so with the entrance gateway; upon a height on the road, and the grounds bending out to it may suit, but where the highway ascends the whole length of the grounds, it may be well to locate the gateway near upon a level with the main buildings, and the avenue will suffer less from washings by heavy rains. The form of the avenue should be to suit circumstances; if prudence demands it to be a straight line, to harmonize convenience with beauty, make it so. If a curve will be as convenient and more graceful, it it should form part of an oval circle or crescent, as near as circumstances will allow. Sharp turns and tortuous crooks should be avoided. The route should be along high grounds, as it is more agreeable to the vision to look down upon the improvements than up to them. It may be, a cut will have to be made through part of the grounds, where deep hollows have to be crossed:—bridges are both ornamental and useful. Even if there be no water below, the arches will serve as passage ways, and the sloping banks sodded and set with shrubery will be pretty to look at.

The best materials for making strong roads are, broken stone and rotten rock or gravel.—The stone a pound weight at bottom and half pound above it, and then covered three inches thick with gravel or rotten rock broken fine, the whole being a foot thick. (There is plenty rotten rock upon the edges of all railways, which could be cheaply quarried, broken fine and transported. It is generally used for the top covering of roads in the parks of European countries.)

It seems strange that so few of our modern made avenues are lined with shade trees. We have a very numerous species suitable for the purpose, and cheap. There is nothing more comely and agreeable in a park than a well shaded avenue, forming a long leafy tunnel to exercise upon in the middle of hot days of summer.

The best species of trees to shade avenues, are those of long, clean stems and wide branching heads. Many different kinds may be used for the sake of diversity, and evergreens may be alternated with deciduous, but set several yards farther back from the road, as their lower branches grow horizontally.

All the foot walks leading from the buildings should go to stationary objects or encircle figures upon the grounds, and they will appear as if made for some useful purpose. Gravel or fine rotten-rock three inches thick will do for foot walks. The surface soil, dug out of the avenue and walks,—if not needed to fill up hollows,—should be carefully preserved and put about the roots of plants when set out, it is ten times more valuable than manures for that purpose.

The modern Flower Garden consists of borders and beds of various sizes and forms dug out upon the lawn, and each is made to grow a certain class of flowering plants; nice ingenuity is needed in making them properly.

The Kitchen Garden should be so far off the main building, that a piece of lawn with small trees and shrubbery will intervene, that with an evergreen hedge enclosing the garden, will hide the bare ground with the leafless trees and bushes during winter. A good quality and depth of soil and a favorable exposure, with near and easy access to water, manure getting in and rubbish getting out, will all have to be well considered. A good gardener will know how broad to make the outer borders and the proper number of beds for rotation cropping, etc.; the right number of perennial vegetable plants to set out as permanent crops. All the different compartments should be enclosed with evergreen hedges. We now have numerous species of evergreens, admirably suited for making hedges. There should be no dead fences on pleasure grounds. The dwarf Boxwood is the best edging for kitchen garden and flower beds where needed. It is everlasting, always comely, and very easily kept in good order.

The modern mode upon large grounds, is to round all corners and make them blunt, and set showy shrubbery upon them, or vases filled with flowering plants. Larger flower stands and statuary should be set in a few yards from the roads and their lower parts partially covered with dwarf shrubbery, so set that the figures will be wholly seen in passing along the walks.

Arbors properly placed and clothed with flowering vines are very pretty, and so are arches over the entrances of the different compartments, and well clothed verandahs give elegance to fine buildings.

After all the roads and figures are formed and the compartments are divided off, the proper

arrangements of trees, shrubbery and the larger sizes of perennial herbaceous flowers can be more correctly decided upon; but no plant, nor class of plants, should shut others out of view from the verandah or second story windows of the main building, unless the grades of the grounds cause it to be so; open glades or streaks should be left to get glimpses of the whole extent of the grounds and their various decorations. In the arrangements, whether singly or in groups or belts of trees, they all should be set in a manner that will give a nice diversity of their hues of verdure, colors of blossoms and times of blooming, and the fragrance they exhale; so as to unite beauty with fragrance, and make a lively show and pleasant sensation in all parts of the grounds all the growing season, and so that the evergreens will give the best shelter and finest effect to the grounds during the winter months.

Parks and villa grounds should be objects of attractions upon the general landscape and suburban gardens, beauties in the neighborhood. As seclusion is the mark of refinement, the outer boundaries of pleasure grounds should be garnished with strong Norway Fir hedges or belts of trees. But in setting trees and shrubbery in belts and groups, evergreen trees should be mixed with deciduous trees, as the lower branches of the former clothe the naked stems of the latter, that will more effectually shut out unsightly views and seclude us from the vulgar stare. Where the arrangements of trees shut out comely views in the general landscape, there may be an observatory upon the house top or an ornamental tower may be erected upon a height to view the surrounding country therefrom. Perhaps the ancient picturesque mode of grouping trees, shrubbery, etc., will suit best for the mowing machine to do its work more readily, and teams will have more room to haul off the hay, that will be a saving of expense.

Water streams running through the grounds, can be made ornamental and useful by damming and making ponds and waterfalls, with their sides walled up or smoothed and sodded, with gravel-walks around or alongside of them, and enclosed with shrubbery and trees. Ducks and geese may swim upon the waters, and their quacking and squealing blending with the murmurs of the waterfalls, will sound musical in the distance; and again, by hydraulics, in the process of plumbing, artificial fountains can be had upon the high grounds around the main buildings. Water is a most useful element in gardening; the prophet in bewailing the fate of his beloved city, compared it to "a garden that hath no water.

Terracing grounds of rapid descent and steep hill-sides, is a comely feature in ornamental gardening; by it waste lands are converted into gardens of beauty and fragrance, by clothing them with suitable plants. Broad terraces around the main building may be set with small growing trees and shrubbery, all of striking beauty, and flowering plants of lesser sizes between them; the sloping banks sodded, and steps at suitable points to go down. Vases full of flowering plants look well at the edges of such steps. Where there are fine views to be had from the house, the trees may all be of tall and slender growths, both deciduous and evergreen, and views can be seen between them. For narrow terraces upon hill-sides, dwarf shrubbery, both deciduous and evergreen, and herbaceous perennial flowering plants all with very fibrous roots are best, as their numerous fibres hold the soil compact and prevents land-slides in spring and washings by heavy rains in summer, and their shade will not be dense enough to injure the grass upon the sloping banks. A terrace that is to encircle several acres around the main building, to divide the pleasure grounds from the pasture fields below, the bank should be supported by a stone wall with steps and gates to go down. An evergreen hedge should be set alongside the wall top, to prevent the injurious effects of frost, and a view can be had over it.

Marshes that cannot be drained, can be made gardens of beauty and sweet perfumes, by planting them with halt aquatic plants, of which we have a very numerous species; some of shining beauties and others of the most delightful odors. See Magnolia glauca for example.

Rock works, both natural and artificial, add another link to the chain of diversity. We have a very great variety of plants that thrive and bloom upon them in great splendor and many of them are very sweet scented; where water works and rock works are combined, they are more rustic-like and doubly attractive.

Glass houses are like luminaries in pleasure grounds, they spread a sunshiny gladness over all the other improvements, and make them look more delightful. They afford a pleasure to families who spend the winters in the rural districts; with tender exotics in bloom while all other vegetation out doors is asleep, and again, in producing foreign grapes in all their natural luciousness, and the plump and juicy Nectarines.

In villa grounds and suburban gardens, economy of space is of much importance, that is often carried too far, by making too few walks, and in making them too narrow. Trees and shrubbery thrive as well with their roots under the walks as under the turf of the lawn, so there is not an inch of space lost by a proper number of walks for the family to take exercise upon ; the sick can exercise upon them when they would not venture upon the highways. If people would look to the many blessings that flow upon them by having gardens, a great many more would possess them. As these grounds are to be stocked by a numerous variety of plants, they should be enlarged by deep tillage and heavy manurings. Where barnyard manures cannot be got in sufficient quantities, get the concentrated fertilizers and apply them liberally, for they are very valuable. Grass is always clean looking, the greater part of the surface should be clothed with it, and a portion of the various fruits may be grown. Shade trees may be wanted at the house ; flowering shrubbery will flourish in the partial shade of the fruit trees. There should be some evergreen trees and shrubs set out to give the grounds a life-like appearance during winter ; the outer edges should be garnished with evergreen hedges. The dividing fences may be boards to train grape vines upon. Flower beds around the house will give a bloom and sweet smell, all the growing season, and the verandah clothed with a good selection of blooming vines will serve as a flower garden under cover all the growing season, and will be enjoyable in all weathers.

Having got so far through the formation of the grounds, let us take a survey of the plants that are to adorn them. Every one who carefully observes how wonderously well the habits and natures of the various classes of plants accommodate all our wants in the different portions of embellishments, must be struck with admiration and awe, at the foresight, goodness and power of an all bounteous Creator.

Grasses,—the bare ground looks unkindly, but *Graminea* and *Trefoil* spread a carpet of verdure over it and makes it a beautiful lawn. Go where we will, we see grass and clover growing. The consideration is what species of grass will thrive best upon this place ? The lands should be deeply tilled, heavily manured, well pulverized and the seeds sown very thick, to ensure a close and lasting green turf. Some of the concentrated fertilizers are very beneficial for grass and grain crops ; they should be used liberally in laying down a lawn ; they are also destructive to insects in the soil, which greatly increases their value, every cultivator should use them. We have used the following kinds with happy satisfaction :—Harrison's Plant Fertilizer, Poudrette, Flour of Bones, Peruvian Guano, Phosphates, etc.

2nd. Creepers and under Shrubs, make gardens where nought else will grow, and furnish foliage and blossoms all the growing season.—We may name, Periwinkle, Lysimachia, Sedum, etc., then Lily of the Valley, Violet, Epigæa, Primrose, etc. Of under shrubs, Kalmia, Rhododendron, Andromeda.

3rd. Ampelopsis, Bignonia and Ivy, climb up and upon unsightly walls and clothe them with beautiful leaves, that saves the expense of moving the buildings, and these plants do not cover any part of the grounds.

4th. Climbers, clothe lattice works with foliage and florescence nearly all the growing season and make them very graceful. (Wire work is nicer than woodwork to train vines upon.)

5th. Herbaceous, perennial hardy flowers, are divided into several distinct classes. Of the fibrous rooted, Chrysanthemum, Delphinum and Phlox are members ; of the tuberous rooted Pæona, Dicentra, Dahlia and Iris are members ; of bulbous rooted, Crocus, Lily, Hyacinth and Tulip are members. Besides these there are tender bedding plants, most numerous. The species and varieties composing the classes of herbaceous plants are legions in numbers, so various in habits and so highly improved within the past few years, their flowers are of all colors and shades of colors, in great prufusion and brilliancy ; they make a dazzling illumination upon the grounds of fragrant flowers the whole growing season that no art can imitate nor compare with ; they are beyond the power of language to describe or to convey a proper idea of, they must be seen.

6th. The Rose. Words cannot make it more charming than it is ; it has long been the theme of orators, song of poets and revered by divines, the gift of the beaux, the jewel of the belle, and of all other fleurs, L'Empereur. The species and varieties are now so very numerous and highly improved, that language would fail in detailing their beauties and sweet odors, their natures and habits are so various. They are suited for many purposes of decoration, and some will flourish upon almost every kind of soil and in every latitude. There cannot be a garden without roses.

7th. Flowering deciduous shrubbery have always been favorites for the lavishness and splendor of their blossoms and their sweet perfumes, and they impart great elegance to pleasure grounds, and now, by recent additions of new and superior species and varieties, the class is far more admirable than ever before. (*Spiræa callosa alba* is one of the choicest new species, it keeps crowned with white bloom many months in succession.) A general collection will bloom from March to September, and many of the species are laden with ornamental fruits through the autumn and early winter ; upon large grounds they are best in groups ; some people will have a group of each species and others want mixed groups.

8th. Evergreen shrubbery, how very neat and tidy they look with their everlasting coats of variegated verdure ; how very different their sizes, habits and forms ; they make a diversity of themselves, and the many new species that have come to us the past few years, make the class most fascinating. They all look neat when singly set out around the main building and near to foot walks, and can be kept in many different sizes and forms by the shears, and there is an expression of nobleness and liberality of mind, in well composed groups. Hitherto, we have had but few with showy blooms, but now Robt. Buist, our famed nurseryman, has an Azalea and a Rhododendron that bloom and flourish in sunshine and storm.

9th. Evergreen trees. They are noble, massy and comely ; how rich and dignified they look, with emerald boughs, so large, glossy and grand. while the deciduous classes are bare. As screens from cold blasts and ornaments of winter, they surpass all other vegetation. How bleak and barren the world in winter would look without them,—set many out.

10th. Fruit trees are ornamental, both when in blossom and in fruit. A few may be set upon the lawn for the sake of diversity, and that will combine the useful with the beautiful.

11th. Deciduous trees. Ah! how lofty and gigantic their statures, how huge their ponderous branches, how lovely and fragrant their blossoms, how comely their foliage of many hues of verdure, and how very admirable their tints in the autumn that gild the landscape with splendor. The species with low and stiff horizontal branches should be set far off the roadsides, and also those with heavy odors and dense shades. They would be disagreeable and too gloomy near to buildings and roads. Another class are too *lean* and others too *pale* for shade trees. The numerous species between the two extremes are the most graceful to set near to buildings and afford by far the most pleasant shade.

How very animating well made horticultural improvements are, and what a glow of pleasure they afford to those who have the strength of souls to admire them and the liberality to make them.

The devout *Psalmist*, in admiration of the beauty and splendor of the embellishments of his royal gardens and pleasure grounds, thus enthusiastically exclaimed, "O worship the Lord in the beauty of his holiness, let the heavens rejoice and let the earth be glad, then shall all the trees in the woods rejoice."

In Europe many of our under shrubs are raised from seeds and make large bushy plants, they are set out in large groups in the open sunshine in the parks there, and flourish and bloom most splendidly ; their shades are deeper, brighter and altogether more beautiful than they are in our woods. A native American would be delighted to see the elegance his indigenous plants give to the lordly parks in Europe. I have assisted to set out Rhododendron maximum and Kalmia latifolia, in half acre groups and Andromeda latifolia, polifolia and pulverulenta, were set in circles, ovals and crescents, each holding twenty-five plants. Kalmia glauca and angustifolia, were grown the same way, and so were Rhododendron hirsuta and ferruginea of Switzerland, all of them are evergreen and bloom abundantly every spring. Our native deciduous *Azaleas* are also raised from seeds and grown in open exposures in groups of fifteen plants, and flourish and bloom in great splendor. When I first saw the *Azalea mirabilis* in bloom in a group of fifteen plants, I thought it the most beautiful sight I ever saw, the blooms were bright scarlet with white streaks. The plants were large and bushy and literally covered with blooms before the foliage was expanded. The yellow species too, were most showy and beautiful. Prinos verticillatus there form a bushy shrub, and is covered with its bright scarlet berries all through the autumn and on till January comes in.

There are a very great many others of our under shrubs grown there to perfection, all in open exposures and also many of the herbaceous inhabitants of our woods are grown in large beds in the open sunshine. Among them are following : Frittilaria alba ; Lilium Philadelphicum, Canadensis and Superbum ; Trillium, severa species; Cypripedium all the five species; Epigæa repens, Asclepias tuberosa, Anemone quinquefolia, and very many others, and many of our Marsh plants are grown there in the common gardens. We only name a few: Golden Rod, Eupatorium purpurea, Asclepias, several species. Large quantities of rotten tanbark and sharp sand are mixed with loamy soils for our wood plants. The first time that I saw the Lobelia cardinalis it filled a circle upon the lawn, ten feet wide and all the plants were in full bloom of dazzling scarlet. I wished I were in the country where it belonged. In British parks there are large groups of their native Broom and Whin, and give a splendid show of yellow blossoms in spring.

Would it not be well for our nurserymen and amateurs to raise many of our pretty blooming evergreen under shrubs, from seeds and grow them in open exposures, by composting the soil with leaf mould or tanbark and sand, so as to nearly resemble the food their parents got in the woods. Nearly all the evergreen shrubbery in British parks bloom profusely and why might we not get many to bloom well with us? Let it be tried.

The cost of the improvements is one of the fountains from which present pleasures and future enjoyments flow. A faithful observance of the rules of prudence will lessen it. Some people hire men to dig up trees in the woods to plant upon their grounds, to save expense and make a boast of. The price of labor is often greater than the price of the same number of trees in the nurseries and planting them, and as the wood trees have only tap roots, not one of a dozen will thrive; that causes repentance and sorrow for loss and disappointments.

In ordering trees from nurseries, state emphatically, the *roots* are wanted along with stems and branches, and in planting them, make the holes larger than the circuit of their roots, break the soil fine to put over them and tramp it firm upon them, then mulch rather than water.

When a tree or shrub is being transplanted, some of its roots are cut and it undergoes a surgical operation which makes it sick. It is therefore a positive necessity to prune in the branches to lessen the draught of sap from it, until it makes a new set of fibres to sustain itself. When a farmer's breeding sow gets sick, he takes some of her sucking pigs off her to save her life. Why then should a planter not act as humanely with his trees? without such care, some of the pigs and branches too may die after exhausting their mothers beyond the chances of recovery.

Having a plan as a guide, the workmen should have no boss but one; if that be the gardener, he should have the whole direction. Proprietors should refrain from familiarity with the workmen and from showing dislike or distrust of their director, as that would open the door for intrigue and rebellion, and triple the expense thereby. The gardener should be shielded from the numerous visitors to the place while the work is in progress, as they ask so many nonsensical questions, no man can answer them all civilly while busy.

In choosing a gardener to make the improvements, some people will say "such a great gardener, knows too much for us, he will ruin us with expense." And we will have to say of our own, the case is just the very reverse. Experience has already taught him the wisdom of complying with the wishes of those who employ him, and even to ask their opinions about matters with which he is already conversant. His knowledge gives him foresight and power, which enable him to make improvements for less cost, and to greater perfection than he could do without them. There is no guess work with him, he sees the place finished before the work is begun. While he is engaged with one job, he is planning for the future, and every thing is done with prudence and care. He is familiar with the natures and wants of all the plants he sets out, the proper selections to make and the soils and exposures most suitable for the various species; and the effects of sunshine, shade, moisture and dryness upon them; when and how to plant them, the sizes and forms they attain at maturity, the shades of their foliage, and colors of their flowers, and their seasons of blooming. He thereby knows how and where to arrange them, both for present effect and future adornment. Success crowns his labors, the lives of hundreds of plants are preserved, which might be lost in less skillful hands and much expense is saved thereby.

People who look impartially upon mankind, observe that those best skilled in their professions are the most economical and discreet, the most trustworthy, the cheapest and the best.

THE CHINESE PRIMROSE.

BY W. P., DETROIT, MICH.

This gay and interesting flower is now found in every well kept greenhouse and conservatory, and well it deserves a place in any collection.

Its profusion of bloom, long continuance, sturdy habit, and many delightful tints of color, render it a favorite with every lover of flowers; in fact, it is indispensable for winter and spring decoration. The attention, of late, given to its cultivation, has been productive of remarkable results. The well-shaped, regularly grown plant of 1868 is a totally different thing to the weak, star-shaped flowers of twenty years ago.

It is probable, Mr. Editor, that what I have to say on the subject is an old tale to most of your experienced readers, but the *Monthly* has a wide circulation among amateurs, and it is to this class of readers I would more particularly address myself; and as I have to write of a class of plants which every one admires, it is needless to make any apology for jotting down a few remarks on its history and culture.

Primula sinensis was first introduced in England, from China, in 1820; but it does not appear to have received any attention from the florist till within the last few years. The original type had star-shaped flowers, of a washy lilac color; but these have gradually developed into blooms of much larger size and more rounded segments, with finely fringed edges, and of every shade of color from pure white to deep crimson. The white flowers, more especially, have, in the in the hands of the hybridizers, undergone a great change within the last two or three years. Some of them have become flaked, spotted or striped with red, and one has been shown with a clear, well defined edge of rosy purple; another has a brownish-orange eye, surrounded with a ring of white, then a broad ring of rosy pink, the edge of the flower being again white. Another is deep purple, the edges of every petal margined with pure white.

The foliage, too, has changed very materially. The Messrs. E. G. Henderson & Co., were the first to introduce the *fern-leaved* variety, in 1864, since which they have obtained many double flowers from the same strain. Last year, Mr. Salter of London, raised a variety with variegated foliage. the leaves are blotched with yellow and veined crimson.

But while these great improvements have been going on in the single flowers, the double ones have not been neglected. These, too, have produced flowers of a high character. They have attained a size double, and even treble, the old double white. The smooth edges have disappeared, and in their place are large, stout petals as finely fringed as the single kinds. Messrs. Windebank & Kingsbury, and Messrs. F. & A. Smith, of London, have been the most successful raisers of double kinds; their latest and best named varieties are

Queen of England. Flowers at first pure white, gradually changing to blush pink; very large and double.

Princess. White, flaked lilac.

White Queen. Very large, pure white, finely fringed.

CULTURE.—If you wish to have flowers at Christmas, sow seed in April or early part of May. Let the pot be one third full of broken crocks for drainage; then fill the pot to within an inch of the top with light sandy soil. Water with warm water thoroughly, and, *next day*, sow the seed. Sprinkle a little fine sand on the top, just enough to cover the seed. Cover the pot with a piece of glass, and place in a warm, shady part of the house. In about two weeks they will come up, when the glass must be removed to prevent them growing up weak and lanky. Always keep the soil moist; and in watering the seedlings, never water overhead, but place the pot in a tub of water. Let the water come to within an inch of the rim of the pot, and in about ten minutes the soil will be thoroughly moistened. As soon as they are large enough to handle, pick them out singly in small pots, using about one quarter rotten leaves in the soil. Repot as soon as the pots are full of roots, and if they should throw up flower stalks before they have completed their growth, pinch them out. Keep near the glass and well ventilated.

In winter never water them with water colder than the house—I prefer it 5 or 10° warmer. When the flower buds appear in December, give them weak manure water once a week; this will give a finer color to the flowers. A subdued light suits them better than the direct rays of the sun.

Primulas have one great advantage, they are not liable to be infested with green fly or red spider; and, although they will bear neglect better than almost any other plant, yet they will amply repay any attention that may be bestowed on them.

BUSINESS MATTERS—FACTS.

NOTE FROM DR. SIEDHOFF.

I do not blame Mr. D'Oench that he is suspicious, as there is so much rascality prevalent that, should I feel inclined to publish what I have experienced, it would fill a whole number of the *Monthly*.

Mr. D'Oench sent me $4 (not $5 as published), late in the season, for a Weehawken. I acknowledged the receipt of the money the next day, by letter. In the middle of November I sent him a vine by mail. Much later he wrote to me about the vine, which had not arrived, as I then saw. I was very sick at that time, so that it was impossible for me to answer.

When I was recovering, Mr Woodward sent me a letter from Mr. D'Oench, inquiring about the vine. I answered immediately and fully, promising that I would *send another vine for the one lost*, as soon as I could have access to the plants. This took place about two weeks ago, (viz., the sending of the vine). My great loss stunned me at first; then I selected the best vines I could pick out, and sent a number of them to every one that had ordered and paid. In a circular I stated my sad case, and offered *to refund the money without delay, or to send better plants in the fall.* Mr. D'Oench was among them.

Not more than a day or two after having mailed the vines, I received the *Monthly*. I, of course, sent my check for the amount, also for postage, to Mr. D'Oench, requesting him to give or throw away the vines.

II.

I sent a vine to you, one to Mr. Saunders at Washington, one to Mr. Woodward, one to each of two gentlemen of the *Agriculturist*, one to Mr. Carter, several to Mr. Caywood, Downing, Van Hyke, and others. About a dozen gentlemen ordered vines, and wished me to send my bill along. I did so; they keep the vines and bills. They may retain both forever; I shall not collect them. A clergyman ordered a vine, and wanted me to send my bill with it—which he did not pay. Six weeks after he sent me word that he did not want the vine, as he had sold his place, and wished me to send somebody to get it. He lived at a distance of two miles from here. I paid no further attention to him, and did not send.

Mr. Merritt, of Roxbury, Mass., received a vine in November; in *March* he informed me the *vine sent had no buds.* It HAD buds when I packed it. I immediately refunded the money, adding that for postage.

I refunded the money to Mr. Miller, Bluffton; to Judge King, Dubuque; to Mr. Perry, Canandaigua; to Mr. Boardman, Rochester; to Mr. Russell, Joliet, &c., &c., although I was never requested by them to do so.

I sent vines, free of any charge, to agricultural colleges and gentlemen engaged in experimenting, and gave away a large number to friends here.

Is there the remotest probability that I should have singled out Mr. D'Oench to cheat him out of $4. Mr. D'Oench did not take into consideration the difference of the climate in Missouri and New Jersey.

Cause.

Several years ago I sent a choice collection of grape vine cuttings to a gentleman in Pennsylvania; the apple scions sent by him in exchange never arrived. Search was made; they had been mailed but got lost. A year after, Mr. John Rutter, of West Chester, Pa., mailed a considerable number of vines to me; they never arrived. They could not be traced, and were promptly replaced by Mr. Rutter, and sent by express.

About the same time I mailed $3 to Mr. Dreer. The letter never reached him. A year after this happened, I enclosed 50 cents in a letter to him, which never arrived.

Mr. Lippincott made me a present of his Vapor Index; it did not arrive. After much trouble it was discovered somewhere, through the indefatigable exertions of our post-master. I received it three weeks later than when it was mailed, but it was entirely spoiled.

Mr. Huber, of Litiz, Pa., received from me a Weehawken in exchange for a Martha. The Martha did not reach me. Search was made through a relation of Mr. Huber, connected with the Post Office in Philadelphia, I believe. Then the vine arrived after the lapse of a month, along with a printed paper from the Post Office, which I had to sign.

The vine I sent you has, in all probability, never reached you, as you have never acknowledged the receipt of it. I wrote *three letters* to Mr. D'Oench, aside from the receipt for the money. You can now draw your own inference.

Effect.

To send money by mail is a very unsafe and disagreeable way. Persons having done so and not receiving a reply, will be apt to think that they are cheated. It is evident that the publication in the *Monthly* compels me to refund any amount claimed, *although I never received it.* A gentleman of Vineland, whose name I never heard, wrote me, last Saturday, that he had sent me $4. I do not doubt that he did so. It is,

however a fact that I never got either the letter or the money. Did I not refund it, would anybody *now* believe that I never saw it. All the experience bought is not too dear at that: I am very glad that I have made it.

[We give this letter of Dr. Siedhoff's a prominent position, in order to illustrate the correctness of the position we have so often taken against admitting anything of a personal nature into our columns. So often what appears to be a fraud or imposition, turns out to be something for which the party blamed is not responsible, or which, at least, amounts to but carelessness or a want of knowledge of good business rules, which, however annoying to the parties in the dispute, or however culpable or reprehensible, do not call for especial newspaper interference.

We are so often blamed for adhering to this rule, that it does good to depart from it occasionally in order to show what would be the inevitable consequence of a general departure therefrom. In the case before us, we thought it a good opportunity to try it,—for although we have never met either party, from what we have heard and believe of them, we felt that, in private life, they were both honorable gentlemen, and that there must be some fault other than deliberate swindling in the matter, as we believe is generally the case in matters of the kind.—Ed.]

GRAPES, PEARS, &c. of ESSEX CO., MASS.

BY MR. J. M. IVES, SALEM, MASS.

As the past season of 1867 was not very propitious for fruit—having so much rain and not enough sun—under these circumstances, I have considered it to have given us an opportunity to ascertain what varieties, particularly of Pears and Grapes, were the least affected—by the cracking of the former and the rot of the latter.

Having a good opportunity, at the exhibition of our Agricultural Society, on the 28th and 29th of September, to examine the varieties of grapes, I made a few hasty notes, as follows:

The Adirondac and Rogers' Nos. 3 and 19 were the ripest of the native or out-door grapes. The Iona, Israella and Concord, although well-colored, were quite acid, particularly the Concord. The show of cold house grapes was good, as was also the Pears. That of Peaches was finer than at any previous show of the Society, particularly in Crawford's Melocoton. I have long known how congenial to this fruit is the warm loamy soil along the Merrimac River.

Among the fruits from my garden was a seedling variety of Crawford, quite as large and fine as the original; seedling Early York and a seedling Blood Freestone, which I value above all the varieties. I cannot find a Blood Freestone in any of the nursery catalogues, except in Duhamel's work, "The *Sanguinole sanguinea.*" This variety *reproduces*, with me thus far, from seed *true* to the *original.* The skin is as thin as the inner envelope of an egg, being red throughout. The fruit, which was placed upon the table, disappeared on the second day of the Exhibition.

Since the 28th of September the weather was fine for the ripening of fruit, and, consequently, on the last of October, fruit progressed in ripening. Rogers' No. 4 and 19 colored. Those persons who make grapes a specialty, speak of Nos. 41, 15 and 22 in high terms. No. 22 or "Salem," was fully equal to my first impression three years since, when I advised the grower "to get a good stock before sending them out;" he, however, sold all his stock of this variety to a New York lady, who lately visited our city, and was well-pleased with the flavor of Nos. 30 and 41. Of these hybrids, I think that No. 28 is nearly equal to 22. No. 30 not so fine; 15 and 23 inclined to rot.

Among the Pears which cracked more or less the past season, were the Beurre Diel, Brown Beurre, St. Michael and Flemish Beauty. The Bosc, Belle Lucrative, Louise Bonne de Jersey, Lawrence, Seckel, Beurre d'Anjou, Urbaniste, Duchesse and Marie Louise, were, as usual, perfectly fair.

Of the Belle Lucrative (Autumn-melting) Pear my friend Downing says, that "*this* and the Seckel are the two highest flavored pears in our country." The Belle Lucrative was one of the few sorts that was uninjured in the spring of 1860. Downing says, "fruit *medium* size." They have increased in size with me from year to year. Since his time, I have specimens, on Pear roots, weighing from ½ to ¾ lbs. each. The tree is hardier than the other fine Flemish pear—the Bosc.

BERBERIS AND MAHONIAS.

BY P. J. BERCKMANS, ESQ., AUGUSTA, GA.

Many plants, although perfectly hardy and adapted to the climate of England, prove, on trial, to be unsuited to that of any section of the United States, although varied in its different latitudes.

Such seems to be the Berberis Darwinii, which is too tender for the Northern winters, and equally so to withstand the Southern summers. This is to be regretted, as this is certainly the neatest flowering variety of its class. After repeated trials I must come to the conclusion that it is only suited for pot culture.

Few of the other Berberis possess any merits sufficient to mention them; but in the section or sub-genus Mahonia, we have several beautiful varieties.

M. japonica is now, (Feb. 10th), in full bloom, and with some of the early blooming Jasmines, (J. nudiflorum, etc.), may be called Herald of Spring. This plant thrives best in a partially shaded situation, such as the North side of a house; as, like most broad leaved evergreens of Japanese or Chinese origin, they must be kept out of the *winter's sun* to bring them to perfection. This variety seeds freely and abundantly. Sow the seeds as soon as mature, and pot off when one inch high. Keep shaded during the summer, and by fall, the young plants will have attained a growth of 6 inches.

M. Bealii seems to be a sub-variety only of M. japonica; it is dwarfer habit, and has one pair of follicles more than the latter.

M. Fortunii has the merit of being a fall bloomer with us; but seldom forms a good shaped bush.

M. aquifolia thrives better in a colder climate, although it has some merit here. I have tried M. Leschenaulti, but it does not stand our warm summers.

FOREIGN REMINISCENCES.
No. 3.
BY H. WINTHROP SARGENT, ESQ.

Perhaps the most remarkable place in England, is Elvaston Castle, (Earl of Harrington's) remarkable for its artificiality—for, in fact, there is hardly any nature about it. Everything, more or less, is clipped, and in many very extraordinary and grotesque shapes In the ornamental grounds, which are very extensive, there is, if I remember right, only one deciduous tree. This is the place (of which it is told) that the late Duke of Devonshire, being very desirous of seeing, and being refused, though he declared his rank, was obliged to assume the garb of a gardener, in order to obtain admission; the late Earl positively forbidding admission to any gentleman while the place was being made, some fifteen to twenty years. Even Mr. Downing, though strongly recommended to Mr. Barron (the gardener) by Sir William Hooker, as well as by Mr., afterwards Sir Joseph Paxton, could only see it from the church tower.

Elvaston Castle is one mile from Borrow-wash, and about five from Derby. Before entering the really ornamental grounds, you pass through the Pinetum; which, a few years since, was the most complete in England. I think now it is inferior in variety, though not in size, to Mr. Gambier Parry's at Higham Court, near Worcester.

At Elvaston, we saw Pinsapos thirty feet high; Menziesii thirty by fifty feet wide; Douglasii fifty feet. Of these the Menzies was the finest; though the Douglass resembles a very delicate Norway Spruce. The Golden Scotch Fir was very effective. Some Deodars were grafted on Cedars of Lebanon, which much improved their character.

The Hemlocks, also, were very beautiful—sweeping to the ground in low pendulous feathery branches, much deeper in color than in America. The Chinese Juniper was very lovely here.

The grand entrance through the golden gates, (opened only on the majority of the Earl of Harrington) as bordered on one side by a variegated Holly hedge, with occasional standards of Irish Yew; and on the other side by a variegated box hedge. It is likewise faced by occasional standards of Irish Yew, in front of both hedges; then occasional large masses of Golden Yew in a circle of common Yew—the latter six inches high and a yard wide.

On both sides of the grand approach, are grass avenues for walks, bordered by Golden and Irish Yews, the former trained to pyramids; behind them a row of Pinus nobilis, in place of Araucarias, destroyed by the frost of 1862; and at end of each grass avenue is a superb Golden Yew, twenty feet high and equally broad, with a back ground of dark Yew. From these avenues you pass into three distinct and superb gardens, each more extraordinary than the others, in size as well as figures of the topiary work.

It was the habit of the late Earl to purchase the largest Yews he could find about the country and, moving them to Elvaston, trim them into shape. In this way there are entire cottages cut out of Yew.

Yew arbors twenty feet high, having a base thirty feet square, with a succession of steps, the tops surmounted by two peacocks, perhaps six feet long and three or more high, the heads and figures closely clipped, while the tails in Golden Yew are allowed to remain uncut and feathery.

One very extraordinary house in Yew, with several gables, is surmounted by two birds, one in a nest and the other attempting to fly out; each larger than the largest eagle.

There are also perfectly green cones, made of English Yew, forty feet high, with golden heads, (caps of Golden Yew), these standing on a double base or platform of English Yew, twenty-five to thirty feet square, and twelve to fifteen inches high, entirely smooth and flat, as if made of stone. Near these are long alleys of smooth turf, bordered by alternate Irish and Golden Yews (the latter tied in by wires to keep them pyramidal and surmounted by golden crowns); and other avenues and alleys, bordered by alternate Irish Junipers and Golden Junipers, (Chamæcyparis variegata). In one of the gardens, which are divided from one another by close Yew hedges twenty feet high, are groups of Irish Junipers, in shape of China barrels, such as are used for seats in our ornamental grounds. In this garden, also, a fine effect is produced by a huge circle one hundred feet in diameter, made of large triangles of alternating golden and green yews, dovetailing into each other, and kept down, (six inches high,) so as to produce a brilliant parterre.

One of the most remarkable things at Elvaston, is the Vandyke garden,—a covered irregular walk, like a prolonged or extended arbor. This was made of Arborvitæ, thickened at the bottom by Box close overhead, and the light admitted at the sides by occasional loop or port holes.

The ornamental water here was beautifully managed; I think as well, if not better, than at any place in England. A lake, of apparently endless extent, with the margin charmingly varied by occasional borders of smooth turf, backed by artificial rock work, and planted with Golden and English Yews, Deodars and Araucarias. Then again points of rough, rugged, craggy looking rocks to the water's edge, in one case closely resembling a ruined castle covered with moss and ivy, the effect increased by a broken mullioned window set against one of the openings or crevices of the rock.

At end of the lake, after passing through a dense Yew walk, you come suddenly upon a large round hole eight feet in diameter, in the rockery, with a little branch of cypress waving over and against it; through this you see the whole extent of the lake, with all its different points and islands; the softer and smoother parts in lawn, with an occasional Weeping Birch or Willow; the rougher with a cedar of Lebanon or Araucaria among the crags.

Another beautiful effect is produced by a sudden vista, through a cavern, and across the lake to another vista, through a cave in which stands a mossy stone cross, wreathed with silver ivy, which is duplicated by its reflection in the water, and beyond this the vista is continued three miles through a dark fir wood until it terminates in Spondon church spire.

The pleasure grounds consist of 112 acres, with, as I have before remarked, only one Deciduous tree,—a Weeping Ash,—grafted seventy-two feet up. The late Earl kept one hundred men; the present Earl (dead within a few months) was only allowed eight, he being a minor and the estate in chancery.

The Cembras are very fine. The largest Cryptomerias twenty feet. Most of the fine Hollies were destroyed last year from being girdled by hares.

SOME WINTER FAVORITES—No. 2.
BY JAS. C. JOHNSTON.

The judicious selection and treatment of desirable plants, for early winter blooming in an ordinary greenhouse, or conservatory, is an interesting subject to most amateur cultivators. It is undeniably the fact, that a large proportion of this numerous class have little practical knowledge, and are but just groping their way along, subject to many stumbles, but worthily persevering in the hope of attaining, one of these days, a certain degree of proficiency.

Many a time and oft we are constrained to sympathise with neighbors—some wealthy, more possessing merely a comfortable competency, who, after their couple of decades of store or office life in the cities, betake themselves to the country, and there develope a long dormant taste for horticultural recreation. A greenhouse is indispensable—for, what would the country be in winter without flowers?

Mike—a pretty good hand at raising early vegetables, (not always),—is not at all in his proper element in a greenhouse, as you shall find to your cost, in the matter of propagating, ventilating and fumigating. In fact, you don't depend upon him at all, for counsel or active co-operation in obtaining desirable plants from reliable sources. Your better half is a far better stand-by; for the ladies,—bless their dear hearts,—take to flowers and flower-growing intuitively.

But the lady of the household is not often very well "posted up" either. Little wonder, therefore, if the worthy couple undergo a series of tantalizing, and usually expensive, disappointments. The stubborn plants grow after a fashion ; but how scanty their bloom, just at the period when we most appreciate flowers. There is no sort of credit due to anybody for a tolerable display, just when early spring is treading close upon the later months of winter.

We want all the shades of red down to pink, blue, purple, yellow and white, in charming contrast with delicate blendings of odor, from the middle of November,—especially in December at Christmas time—and all through the dull months of January and February.

This can easily be accomplished with not one cent of extra cost. On the contrary, plants propagated and grown as they ought to be, entail less cost. It is the rejection of failures, and the frequent substitution of successors, too often selected at random from catalogues (not always reliable), which tells on the sum total annual cost of a greenhouse.

Our amateur experience, resulting in some measure of success, may not be without interest, and it is submitted in the hope that others possessing more, may take the hint and do likewise. There is a deficiency of such discussions in our horticultural periodicals, and a corresponding lack of interest in their pages. Pomological subjects are excellent in their way and place ; but, like everything else, tedious when overdone. By all means let us have a little more variety.

We merely purpose to describe, briefly as possible, our Winter Favorites, reliable, staple things not difficult to grow ; blooming more or less freely throughout the months named—adding a few hints how to cultivate them.

1. Salvia Gesneriflora.

This choice Salvia is specially a winter bloomer. We have endeavored to flower it out-of-doors, but only succeeded in growing robust specimens, which bear lifting and potting in October very nicely. The slight shock of removal (quickly recovered) induces a most liberal development of flower buds, which expand in succession, commencing early in December, and, at this time of writing, (Jan. 31,) it is a complete mass of the most brilliant pale scarlet or cherry red blossoms. One plant is exceedingly conspicuous in a back row. It is nearly 3 feet high, with half a dozen much branched leading stems ; every one of the laterals having its panicle of expanded bloom, or buds in process of development.

For gorgeous effect, or duration of bloom, it cannot be surpassed. Plants grown throughout the summer in pots, started at the same time as those set out in the open ground, care for them as you may, bear no kind of comparison, either in vigor of growth or profusion of flowers. This Salvia can be raised from seed or from cuttings. The latter, put in now, root quickly, if in a very porous medium. We greatly prefer a mixture of finely sifted charcoal dust and very gritty sand, half and half, which seems to agree with almost every thing at this season of the year. Later, we add a little fresh 3 year old leaf mould. In potting the Salvia (after removal from the border) the compost should neither be rich nor porous.

2. Linum trigynum.

A profuse and extremely brilliant golden yellow, exceedingly showy and useful during December and January. The individual blooms are short-lived, but follow each other promptly on well-grown specimens. Tolerable plants can be had by subdivision, in spring, of those which have bloomed during the winter ; for this purpose cut back in February, and top dress with rich compost.

Better plants are those raised from cuttings, as they are not so apt to throw up long, spindly suckers from the roots. These suckers must either be removed or shortened in, if wanted to add size to the specimen, and the sooner that is done the better. Rampant growth calls for pinching in, prior to the middle of August, but must cease after 1st of September. A little *weak* liquid manure once a fortnight during October and November is excellent. The most suitable compost is well rotted turfy loam, and entirely rotted cow dung, with a slight dash of sharp sand in it—about ⅝ loam to ⅜ manure. A few small pieces of charcoal at the bottom of the pot, over the crocks are beneficial.

3. Fuchsia serratifolia multiflora.

This is one of the winter blooming Fuchsias, and the best of them known to us. (Dominiana is a magnificent hybrid, with a splendid dark olive green foliage and ruby colored stems ; but, from some reason we have failed to detect, it has ceased to bloom with us altogether. The flowers which are of a beautiful orange shade, spring from the summit of the upright shoots. We shall be glad to know the reason of this fault.)

The Fuchsia now under discussion is very lovely and really unique. The tube is dark carmine at the base, shading off to pink or pinkish-

white ; sepals light orange distinctly tipped with green.

There is an old Fuchsia, name unknown to us, which must not be confused with this. It has very long spindly blooms, which droop much as if about to fall off: leaves large and coarse. But the genuine F. serratifolia multiflora has well-proportioned, extremely graceful blooms, with strong foot stalks standing off at a very becoming angle from the upright stems. The foliage is of medium dimension and handsome. We never saw this Fuchsia in any American catalogue and therefore imported it from England.

Like all good things, it requires certain treatment ; without which, unlike some good things, it won't bloom at all. The preliminary condition is to check its excessive tendency to throw up suckers from below, and a multiplicity of lateral branches. The former must be eradicated, the latter cut off. Decide upon the number of shoots to be developed—say 3 to 5, according to age of plant—and permit nothing else to grow. The compost must not be porous nor rich. A most valuable addition is cocoa fibre, if you have it. If suffered to flag for want of moisture the leaves drop quicker than almost any other plant we know of. During the summer months, the pots must be plunged where the sun will not strike them after 8 or 9 o'clock ; but the shade and drip of trees will not answer. It blooms with us in January.

4. Cineraria.

In Europe, this plant is perpetuated from one season to another—but the fierce summer heat defeats the attempt with us. The plants survive, but their condition is entirely used up. It does not matter much. Treated as an annual, if the seed is good, a fine variety of choice plants can be raised—vigorous, and redolent of bloom. No greenhouse is complete without the Cineraria—they yield such a blaze of colors. Magenta, purple and mazarine selfs, white tipped crimson, or some shade of blue, are the principal colors.

The culture is simple : sow seed, in pans or boxes, early in May ; again, 15th to 20th of June —which ensures a continuous bloom from the early part of January to end of February, sometimes well on in March.

Soil, rich and light ; the best, very old cow dung (not less than two years decayed, and friable), with decayed turfy loam, equal parts, and some sharp sand. Fill the boxes within half an inch of the surface, not too smoothly. Scatter the seed, not too generously, *on the surface* ; then press it moderately smooth. Do not water at first. Place loose glass on the top, resting on the edges of the box or pans, and set these in a nearly spent hotbed, or in a warm frame. Shade from the sun, and moisten very slightly, when the soil begins to look rather dry, with warm water. The seedlings are apt to damp off, and must be watered with discretion, and, by no means, exposed to much sun at any period of their growth. When they have attained their second leaves, pinch off into other boxes, and set these under glass in a cold frame until fairly started to grow. When about two or three inches in circumference, transfer to small pots, in rich compost, not too porous, and plunge them where the sun can't punish them during the day.

In the early part of September, *at latest*, transfer, during cloudy or moist weather, to pots 6 by 6, and place in a rather shady cold frame till the first intimations of approaching frost, when they must be removed to the greenhouse and kept in a position near the glass.

Pphides are specially fond of the Cineraria, but are easily kept under by smoking with tobacco *stems;* not once, but two successive nights. The first stupefies, the second slays without fail and most effectually. Then use the syringe. When the blooms are rising, apply weak liquid manure once a week ; and when the flowers expand, water must be very liberally given.

5. Cyclamen.

There are several varieties of this charming plant: Persicum, Coum, Africanum, &c. The first is the best. It somewhat resembles a Snowdrop, in size and height, with longer petals. These are either pure white, or pale pinkish-rose, the tube tipped vivid crimson or purple, with a very prominent effect. The foliage is a dark ivy-green, more or less veined with greenish-white—almost a variegation.

A full-grown specimen throws up a succession of blooms 3 to 5 at a time, which, in a cool greenhouse, are remarkably durable, lasting from 15 to 20 days. With us, it flowers throughout January and February. For a front row on the stage it is a gem, always attracting much commendation.

The Cyclamen is tuberous rooted and can only be raised from seed, as it produces no off-sets. An ample supply can be obtained by sowing in February. Use shallow boxes ; fill up two-thirds with a generous compost (as the seedlings are not to be shifted for some time), and the balance with a less rich mixture and rather more sand. As the seedlings progress, remove any developments of fungi beginning to grow around the young tubers, which presently show on the surface, and carefully stir the soil, but not so as to disturb them. Later, carefully remove some of the surface soil, and replace with a richer compost—decayed cow manure is by far the best with a little yellow loam and sand. In September, lift carefully, so as not to damage the roots, and replant the small tubers (then about the size of Marrowfat peas), round the sides of flower pots, just below the surface and *no more*, so that when watered they may partly reappear. The young stock must be kept growing without intermission. In the following Fall select the tubers according to size, and plant 2 or 3 in a pot, or singly in rather small sized pots, just as you want them for particular positions. Full grown tubers are larger than the biggest bulbs of Gladiolus.

The Cylamen must never be allowed to dry up, even during its period of rest; at which time, however, bestow water sparingly. It does not cease to grow all the year round.

6. GARDENIA CITRIODORA.

A dwarf species of the Cape Jasmine, different in its habit, style of flower, and period of blooming, from all the others we are acquainted with. Our specimen, imported from Europe several years ago, is not over 8 inches high, with a bushy circumference in proportion. In December, it was literally loaded with panicles of buds, which opened in succession, small in size, white, and of the sweetest odor—a refined type of the tuberose. At one time it bore 52 expanded flowers. Brought into the parlor its delicious scent pervaded the whole room. This is a gem of the first class, and evidently rare, as we have not seen it in any American Catalogue.

BUFFALO GRASS.

BY MR. A. FENDLER.

In the January number of the *Monthly*, page 17, three different plants are spoken of under the name of "Buffalo Grass." What, some twenty years ago, was generally known, by hunters and travelers on the Plains west of the Missouri River, as Buffalo grass, and botanically described by Dr. Engelmann under the name of *Buchloe dactyloides*, is a grass quite different from those cited above.

It is found on the great Western prairies, extending from the head waters of the Missouri River as far south as Texas. It is a low-tufted perennial grass, growing in larger or small patches, and propagating itself chiefly by sending out numerous runners, of a close and compact texture, which are very tenacious of life, and are capable of giving nutriment to the immense herds of Buffaloes at a season when its leaves, as well as those of most other plants, are withered and dead.

It is one of the few diœcious grasses known to Botany, having its male and female flowers separate on different individual plants.

On poor soil, the Buffalo grass (*Buchloe*) is apt to gradually overspread and kill out all such plants that need a considerable amount of fertility. Three years ago, I planted on a dry gravelly slope, facing southwest, two or three plants, which have spread rather slowly, but steadily, and now occupy a surface 7 ft. long by 4 ft. wide. The runners are from 6 to 9 inches long, and their internodes 2 to 3 inches.

At present, Feb. 10th, this patch of Buffalo grass is covered with snow, the blades dead and apparently destitute of nutriment; but the runners are green, and of a sweet, pleasant taste, indicative of great nutritive qualities.

On rich soil, it grows and spreads very fast as long as it is kept free from weeds, the runners crossing and recrossing each other many times, until the whole patch is forming an elastic cushion of half a foot in depth.

THE PEAR.

BY D. B. WIER, LACON, ILLINOIS.

Like the apple the pear is not a native of this country, but it is indigenous in Europe and Asia. It is a more modern fruit in its present perfection than the apple, only within the two or three last centuries has its delicious qualities been fully developed. In its wild state it is one of the most worthless of fruits, in fact we have many wild native fruits here, which are delicious in comparison. But when cultivated, it is only rivaled by the peach in its rich, luscious, juicy flavor. If it were not for some diseases peculiar to itself and the first cost of the tree, the pear would soon be the leading favorite with all planters, for those persons are few who would not prefer the best pear to the best apple, either at the desert, cooked dried or canned. Like the apple, with proper care it can be had almost the year round. The varieties are almost endless and are increasing each year, and we think that when growing new varieties from seed is better understood, *and better systems of propagation are found out*, the pear

will crowd close on the apple as the fruit tree for the million.

PLANTING.

The directions for planting the apple apply to the pear. only the ground should be plowed deeper and the trees planted deeper. Dwarf trees should be planted deep so as to have the junction of the pear with the Quince root two or three inches under the surface. In practice when we plow the trees we do not do this, but plant rather shallow and ridge the earth up to the tree both ways during the summer with a turning plow.

PROPAGATION.

The genus Pyrus to which the common pear belongs is somewhat large, and the pear (*pyrus communis*) will grow with greater or less success when worked on most any of them, but when budded on the common apple (*pyrus malus*), to which it appears very nearly related, it does not generally succeed. When worked on to some varieties of the Quince family it makes beautiful, productive dwarf trees, and some varieties are particularly fine when budded on common Quince (*Cydonia vulgaris*), other varieties do well worked on the common white thorn, Cratægus oxyacantha and it also succeeds well when werked on the common mountain ash. The most permanent bottom for the pear however, is a good thrifty pear seedling. Some few varieties give much better fruit when worked on the Quince, but varieties there are that will not unite with the Quince stock at all. We prefer dwarfs worked on the Quince planted deep on rich moist soils, so that the pear will eventually take root, they are cheaper, live better, and come into bearing sooner; *but when planted on a dry loose soil would always prefer a standard or those with pear bottoms.*

INSECTS INJURIOUS TO THE LEAVES, TREE, OR FRUIT.

The pear tree has been almost entirely exempt from injury by insects in this neighborhood.

DISEASES OF THE TREE.

Unfortunately for this delicious fruit, the tree is very subject to fatal diseases, all of which are known under the general name of pear blight. Much theorizing and experimenting as to their cause and cure, have as yet thrown but little light on the subject. We have studied and experimented on them considerably, and our opinion as to their cause and cure differ materially from most observers. *We think there are at least* 3 *distinct diseases which can be traced to very different causes.* The first we shall consider, and the most common in this neighborhood, which though not fatal, is very destructive to the vigor of the tree,—its effect has given it a name "Cracking of the fruit;" it may be known by its suddenly spreading over the leaves and young fruit, and marking them with dark blotches, causing the leaves to fall prematurely, and causing the fruit of some varieties to "crack." The White Doyenne was terribly affected last year in the fruit, and the Flemish Beauty in the leaf. Those dark blotches are evidently caused by a fungoid growth, *and are not themselves the disease but the result of some deleterious influence*, which we consider entirely climatic, therefore unavoidable. *This disease generally follows a damp cold spell in the spring when the leaves and fruit are young and tender, followed by a hot sun.* The most fatal disease of the pear tree in this neighborhood is a very distinct one from the last, also called blight; this is usually discovered first by finding the tree covered by dead patches of bark on the body and larger branches of the tree. We consider the primal cause of the disease, *exhaustion caused by overbearing, especially when the tree gives its first full crop of fruit.* It is also caused by severe winter, too poor soil, too rich soil, *excessive cultivation, therefore we consider a happy medium the best remedy. Never let your trees overbear, neither plant on too poor or too rich soil, but be sure to give preference to the so-called poor soils, as they contain more suitable substance for the pear.* Cultivate (if at all after the trees are well established) early in the season, say from opening of spring to the 15th of June, as the growing season of the Pear is short, and a very little pains at this time will usually ward off this most fatal disease. If the tree is young, and has blossomed freely, and set a full crop, *pluck off half of it, and give the tree a thorough cultivation, though not later than the first of July*, then it will have strength to ripen the fruit and gird up its ribs for another campaign.

There is still another, sometimes fatal and troublesome disease to which the pear tree is subject, we mean what is usually and properly called leaf blight. We think it distinct from the other two, because we believe its cause different. It may be known by the leaves of a portion or all of the tree suddenly turning black in the growing season, usually towards the end of it. Commencing in the leaves it often descends into the twigs and branches, and sometimes poisons the whole or greater part of the tree and killing it outright. Its causes we think are climatic, and therefore unavoidable.

The disease results *from a sudden engorgement of* *the sap tunnels, caused by an over supply of moisture which is again suddenly cut off by hot drying weather.* It is doubtless caused too by *an over supply of sap from the roots, too rich or crude in quality, causing a surfeit in the leaves, which causes the sap to be improperly elaborated and becomes poisonous to the tree.* We have come to these conclusions, finding this disease more prevalent among trees growing upon highly manured and well cultivated soils. Standard trees established on our sandy ridges, are almost entirely exempt from all these diseases, particularly the last named and most troublesome, why? *Because the soil is so loose and porous that the roots run very deep, and are kept out of reach of sudden influence.* In no place from *Maine to Nebraska have we seen more healthy and productive pear trees than in this immediate neighborhood.* When once established and properly cared for, they give as abundant and more regular crops than the apple, and as the fruit commands two or three times the price, we think they are not so much planted as they should be. To thoroughly establish a tree,—if a standard, give it a good start by planting it properly, then give it a thorough cultivation each year until the first of July, shortening in, each spring all new shoots of the last year to eighteen inches. *Look over the trees each October, and cut off all unripe immature shoots, and in the three or four years* the tree will be well established. Now *sow the ground in clover*, which will usually throw the tree into bearing, and great care must be taken not to allow *it to overbear in its first crop: at least two-thirds of the first full setting of fruit should be taken off*. The scientific grower will accomplish this by removing the fruit spurs; your tree will now need but little farther care, and may be considered a permanent institution. If the fruit should become too small, a little thinning out of the branches will remedy it. Always get the tops (head) of pear trees as low as possible, and keep them there. *They appear to do better by being somewhat crowded with other trees, sheltered by evergreens*, and with the ground shaded by small fruits growing among them. The treatment of dwarf trees must be different, because the roots are different they must have a heavier deeper soil.

ON CULTIVATION.

The Quince root not being very hardy they should be planted deep and banked up with soil, or mulched (the roots covered) with coarse litter each fall,—with these exceptions their care is the same as the standard.

CARE OF THE FRUIT.

Nearly all varieties of pears should be gathered as soon as they are fully matured and placed in a close warm place to ripen. In this way they are much finer and safe from the depredations of "birds without feathers."

[We give this very interesting paper by an intelligent Western Horticulturist, as showing the present state of Western Pear knowledge in this particular line. We think however, that our readers will note that some of the positions of Mr. Wier, have been held and abandoned by some of our correspondents who have written on the questions.]

EDITORIAL.

BOTANICAL STUDIES.

It is with great pleasure we note the increasing popularity of botanical studies in Philadelphia, and we believe the same true of other cities. Here the taste has become, we were going to say, fashionable; but that is not correctly expressed; for fashion is but a copying of others without regard to the pleasure or propriety of the thing. The ladies, particularly, follow it with much zest, under the teachings of Miss Rachel Bodley, who has the rare gift of making the most abstruse theories clear and pleasing. Last year, this lady had, as we are informed, over seventy students, many of them from our first families, studying in her class. The interest of the study is heightened by field excursions, wherein the lessons of the closet are illustrated in the open air.

It is said that evils generally cure themselves. It is singular that the devotion which so many ladies exclusively give to frivolities and fashionable follies have endured so long, without an attempt at recovery. It is a pleasure to note these improving signs.

NOTES OF WESTERN TRAVEL.

Cobden, or South Pass, Ill., is a very interesting place to an Eastern man. The soil and climate, the society, the locality, the great beauty of the mountain scenery, and the excellent combinations of all circumstances to make it a prosperous place, were all fascinating. We are satisfied with our own lot, here in one of the great centres of learning and science; but if it were necessary for us to pitch our tent again in another place, we don't know whether we should not stake out our quarters in this lovely spot.

To understand this place, we suppose most of Illinois to have been, at one time, an immense lake, of which, perhaps, the Kaskasia river is the most of what remains. The outlet of this lake was to the south, over a ridge of hills which spur out from the Ozark range of the Rocky Mountains on the west, meeting with a similar ridge on the east from the Cumberland, and wearing a way for itself at this place, forming the "Pass," and draining the lake at the same time.

How many years ago it is since a roaring Niagara rushed through these majestic rocks none can tell; but, with the same laws in force now as then, and the same results inevitable, we could not help picturing, in the strange far away future, the teeming population and industrial enterprises which shall exist in the bed of the now mighty waste of Erie waters—when who shall be Senator from Erie "State" to the Congress of the still mighty Republic, shall trouble its inhabitants,—and when the power and capabilities of its soil and climate shall draw pomologists from all quarters of the Union to discuss and decide as here in Cobden.

Here we found a large number of the most intelligent fruit growers in the State,—gentlemen and ladies,—assembled in convention, who very handsomely welcomed our party on its appearance amongst them. The meeting was held in the public hall, which serves a general utility part in the economy of the town. On Sunday it is used for religious meetings; and the Board of Managers is so arranged that each denomination has a chance to have a preacher of its own creed every Sunday in turn.

The show of Apples, as is usual in the West, was remarkably fine, and the Pears were very creditable; though, unlike the apples, not quite equal to those of the North-eastern States. The discussions were rather above the average intelligence we have found at fruit-growers meetings, and, in point of numbers and enthusiasm, far above what we generally see.

It was easy to understand that the average Western man speaks from what he sees, without much regard to the theory of the matter; while the average man of the East, in his conversation, speaks rather of what he thinks and of what seems reasonable to him. The Western fruit grower does not care to know so much *why* to do a thing, as *how to do it;* hence he is apt to mistake coincidences for causes, and many of the remarks we hear seem amusing. In this vein we were disposed to tell a story, the object being to show the absurdity of some of our friends' reasonings. As the result of our effort in the humorous line, we were a little surprised to read, in the transactions of the Illinois Hort. Society, just published, that "Mr. Meehan believes most of the diseases of the vine arise from a want of Electricity." We don't believe any such thing. We have "sworn off" from joking when we go West again.

The most profitable fruit crops here appear to be the Peach and Strawberry. The former does remarkably well. The locality is about in the same latitude with Petersburg, Virginia, and is thus in a good line with a well known Peach district. The trees are mostly all branched low, and so abundant was the fruit that whole orchards were bent to the ground as level as a half ripe grain field under a midsummer storm. Immense numbers were lying on the ground unused,—the best only being marketed. In former times these were collected and made into brandy; but of late years, through some difficulties from the revenue system, it is said, nothing is made of them.

Timber, for fruit boxes, is sawed on the place, and the fruit is regularly sent by the Illinois Central R. R. to the great "New York" of the West—Chicago,—which is fast becoming like the Eastern city,—a place where consumption is going a long way ahead of production, and where consequently, high prices rule, and the chances to make fortunes, and lose them again, alternate rapidly.

It was found difficult to make the strawberry crop pay here for a while, on account of the difficulty of getting pickers, as the "natives," as the old settlers are called, were long adverse to doing anything but grow cotton enough for the wife to spin, tobacco for the husband to chew, and corn and pig enough to make hog and hominy for the winter. Money was of no use, as "store goods" were not needed and unpopular; but the native girls could not long resist the temptation of Yankee bonnets and fancy gowns. They went to working; and the men, who, from time immemorial, have followed the Eves in their temptations, went and did likewise; and so, now, Egypt does pretty well on the labor score.

The Apple is not so profitable here as the other two crops—probably from the fact, that it is only recently that many trees have been in bearing, and it always takes some time to adapt a market to a crop. But the fruit grew to a tempting size, and the trees were marvels of health and beauty. The Buckingham, Ben Davis, and Jonathan, seemed most popular, as they were planted everywhere.

The Pear grew delightfully, and there were immense plantations of them—none, however, more than 5 or 6 years old. In one lot, we believe, there were thirty thousand trees. They were very healthy, though here and there some trees had their leaves falling early, from leaf blight. As, however, there is not much of it yet, it may be kept down by gathering and destroying before the spores mature in August. All the chief cultivators had come to the conclusion that cultivating Pear orchards was a great evil. They ran the harrow through once early in spring; after that kept down, by continual mowing, what weeds might want to arise.

This locality must be a mine of wealth to a scientific man. Captain Freeman, an accomplished geologist, and engaged on a survey of the State, told us many very rare fossils had been found in strata cropping out at the surface, which, in other places, had to be sought for deep in the earth; and, botanically, the Flora must be in the highest degree interesting. On a rock near Captain Freeman's we gathered fine specimens of that rare Fern *Asplenium pinnatifidum*, which has hitherto only been found in a very few localities east. The *Rhus aromatica*, a true Southern plant, was also abundant along the road sides.

And, speaking of science, we may remark that scientific studies furnish a regular pastime to the ladies of South Pass. Entomology, Botany and Geology, especially, seemed as familiar to them as their regular household duties, of which last, particularly, they most generously afforded us abundant opportunities of witnessing the excellence of their knowledge, and disposition to use that knowledge for the pleasure and comfort of strangers like ourselves. The recollection of our call at South Pass will not soon pass away.

DEUTZIAS.

One of the most pleasing features of Horticultural progress is the increased popularity of ornamental shrubs. One of the prettiest additions to our already good list, is the *Deutzia crenata flore pleno*, or double flowered Deutzia crenata, which has now been two years before the public. There is a slight tint of rose on the flower, which adds to its beauty.

The original species, *D. crenata*, is not as much planted as it should be. Many observers can see no difference between it and *D. scabra*; but it is a round headed grower, while the Scabra is an upright and rather rougher in habit. It makes up for its looks, however, by the fragrance of its flowers.

Another very pretty species is the low-growing *Deutzia gracilis*, which has long pendant racemes of pure white flowers. It grows only about 2 ft. high; *D. crenata* about 4 feet; *D. scabra* about 6 feet.

The double flowered one will probably be like other double flowered shrubs, and not grow quite as strong as the original single flowered type.

THE LESSON OF THE YEAR.

If anything be wanted to teach people how cold kills plants, the past winter affords the material. It was at one time supposed that frost destroyed plants by rupturing the sap vessels. The cells were believed to expand and burst by frozen sap. It was known that a bottle of water would burst in this way,—and why should not a plant cell? The plant was killed, and the bottle destroyed; what more natural than to suppose the process identical?

Some years ago, the writer of this attempted to show the fallacy of such a theory. In *Hovey's Magazine* of that time, some of our best horticulturists argued the point. We endeavored to satisfy our friends that, when evaporation went on faster than the roots could supply moisture, the plant had to die. No theory of cell-bursting was necessary.

Evaporation is excessive in cold weather.—When there is not enough moisture to fill the cells—when it goes out faster than it comes in—they die; not by bursting, but by shrinking away. A recognition of this fact will save many a tender tree; and a review of the past winter's losses must convince any one that such is the fact.

We have not had an extraordinary low temperature, yet plants never suffered so. But we had

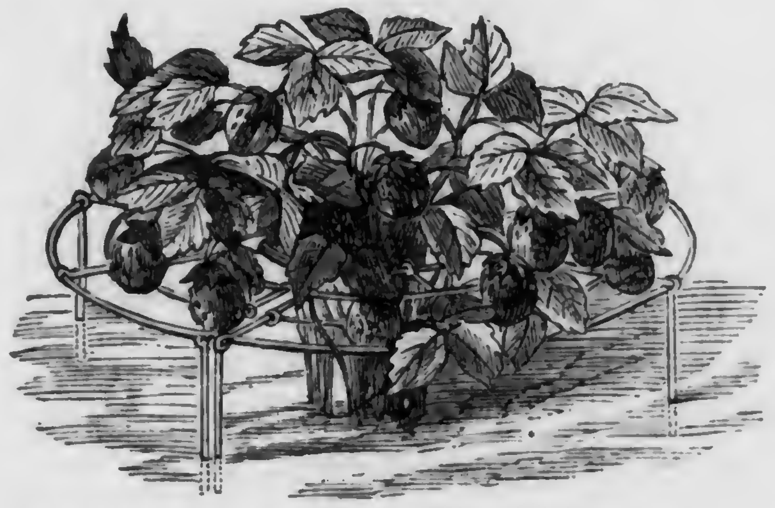
a higher wind, coupled with a low temperature, than we ever knew before. The exhaustive strain on the evaporative powers of a plant in a high wind, even in a temperate atmosphere, is enormous. How much greater must it be in a very cold medium?

Thus we see that wherever there is a shelter from wind, the tender plant escapes: but set even the hardiest where the wind can concentrate all its power against it; set for instance, an Oriental, or a Norway Spruce on a bank near a house where the winds can sweep around it, and it will "go" equally with the tenderest.

How strange it is that men cannot learn from these facts! People have yet such religious veneration for the thermometer as their infallible guide in this matter, that it seems a sacrilege in any one to suggest anything better. English papers, and some of our own, are filled with comparisons of the thermometer and the deaths, as if this was the all in all of Horticultural knowledge. Our readers we hope fully understand that with this the Hygrometer and the Dynamic force of the winds are quite as important to study, and in the absence of any good instruments like the thermometer to assist us, we can only say that he who is wise, will shelter his barns, his houses, his cattle, his orchards, his rare plants, trees and flowers. Plant trees,—fast growing, hardy trees,—everywhere around from whence a cold dry wind may blow, and you will be astonished to find that although your thermometer may sink to unheard of figures, your plants are not near as much hurt as those of him who still clings to the old notion that frost bursts the sap vessels and there is no help for it. Dryness is an especial weakness of our climate, and as antagonistic to this, the watchword of every progressive Horticulturist should be shelter, shelter, shelter.

A STRAWBERRY CRINOLINE.

This is the name given to an article of wire work, intended to help this fair fruit,—as it does any fair form to make a more presentable appearance than it otherwise would. I suppose ou marketmen will say, "it won't pay;" but amateurs, who do not mind extra expense to get fine, clean and perfect fruit, like to have such things. This thing is said to be far superior to the old Strawberry tile.



It is made of wire, and the cut explains it.

SCRAPS AND QUERIES.

FLORIDA NOTES.—A *Volusia, Florida*, correspondent, under date of April 22d, 1868, sends us the following interesting bit of gossip:—"Seeing that you, of the Middle States, are having a "Tomato war," and the rebel "Tilden" is "getting it" on all sides, I have concluded to add a little testimony in favor of the "rebel."

We, way down here, are not at all interested in the question of early Tomatoes, as we have them nearly the whole year round—not knowing when early ones come in or late ones go out. This winter has been very mild with us, and we have had Tomatoes, Peppers, and all tender annuals, untouched with frost, in the open ground, bearing profusely. Tomatoes seem, this year at least, to be perennials, as I have them now blooming and bearing that were planted in January, 1867.

I know of no tomato that comes as near perfection (with us) as the Tilden. Last year I had only twelve plants, and from those twelve I supplied every want of my family, and sold large quantities. I had, at the same time, hundreds of other varieties—as Cook's Favorite, Early Red, Large Smooth, Mammoth Chihuahua, &c.—and from them obtained but few well ripened fruit; while from the Tilden, I obtained none but large, smooth, well perfected tomatoes. They also bore quite late, and stood well our hot, burning sun, and copious rains during the "rainy season."

I am, this year, planting largely of "Cedar Hill," "Maupay" and Tilden. I am also experimenting with a so-called new variety, the "General Grant." My greatest pleasure consists in proving all varieties of vegetables, in hopes of finding the best varieties suited to our climate and soil. As yet in the tomato line I have found none possessing all the good qualities of the "Tilden."

What a cold time you have of it at the North, to be sure. I see, by the papers, you are having ice and snow yet; while we are enjoying, to the full extent, our spring vegetables. Peas, Turnips and Windsor Beans have all gone, but we are now having String Beans, Lettuce, Beets, Corn, Squashes, Onions, Radishes, and in a few days will have Cucumbers, &c. Cabbages, Turnips, Radishes, Cauliflower, Kohl Rabi, and Parsnips we've had all winter.

Your correspondent, in March number of the *Monthly*, (F. S. Tipton, of Indiana,) says of the West Indian Papaw, (Carica Papaya,) "I would long ago have bought a pair of them (male and female) *were they to be had in this country.*" Will you have the kindness to inform Mr. F. S. Tipton that the plant grows freely in East and South Florida, and that in my immediate neighborhood we have several plants growing on wild, uncultivated land.

This is surely the paradise for an amateur gardener to revel in,—so many new and curious plants to attract his attention. Those that do come here, do not leave our thoroughfares, but seem to think, as they do not see much on the line of travel, that we have nothing. How much they are mistaken. If some lover of nature would only spend a short time in our deep, dense hammocks, he would find much to interest and amuse. I will send you in a short time one of our greatest curiosities, the Florida Air Plant, with a description."

GROUPING SHRUBS.—*W. H. C.* inquires: "In planting flowering shrubs, what kinds group best together, and in connection with evergreens?"

[There are many trees which never group well with evergreens—the Larch, for instance,—but we know of no shrubs but blend well. So much depends on the object of a group, how it should be arranged. One to flower very early, and be nearly the same height, would be Pyrus japonica, Forsythia viridissima, Spiræa prunifolia and Mahonia aquifolia.]

SEEDLING VERBENAS.—We have received from *Mr. S. H. Purple, Columbia, Pa.*, specimens of seedling Verbenas, purple, crimson, pink, and shades of these all pencilled; striped and mottled beautifully. Very much, however, of the value of a Verbena depends on its habit and behavior in the flower beds. Almost all the striped Verbenas we have seen have been derived from the Teucroides breed, which is not a good bedder. If these are from the old Melindres species, they will be valuable.

WEIGELA.—*W. E. C., Cleveland*, says: "Seeing in the article on Pruning, page 144, May number, a word spelled thus, W*ei*gelia. I would like to know if that is right, or if is W*ie*gelia, as I sometimes see it spelled, and if the *g* is soft or hard? I suppose it to be from a German proper name, but whether Wiegel or Weigel, I do not know. In either case I should think the *g* should be hard, and yet I oftener hear it pronounced *Wijelia* than anything else. Please set me right."

[It is *Weigela*, and the *g* is hard.]

INJURY FROM BEETLES.—A correspondent at *Silverton, Glenville P. O., Harford Co., Md.*, writes to us as follows: "I wish to ask the favor of you, if you can give me any information about, or how to prevent, the depredations of a large beetle—a bug that comes among us early next month, and devours the tender foliage of trees or shrubbery just putting out. These beetles are as large as the Early or June Beetle, of a dark or brown color. They come forth at twilight, with a great buzzing around and over the trees, and thus by hundreds devour the tender foliage of the lawn trees, the roses, and other things. Is there any remedy, or anything that will prevent their depredations?

Also, can you give me any information that will surely prevent the ravages of those small worms that devour, in certain places, the Elm trees?

I take the liberty of asking information of you on these two things, if not overtaxed in your correspondence. I am aware of your practical knowledge on such subjects, and would be very much obliged to you for the desired information. I do not ask it as an enquiry through your *Monthly*.

As the spring approaches I dread the depredations and noise of those devouring beetles on my young trees."

[Though our duties are too numerous to answer inquiries privately, as a general rule, yet we have written to our correspondent, though not in a very satisfactory way to ourselves, and publish the letter here to invite the practical experience of any who have suffered in the same way.]

VINES FOR A STUMP.—*W. H. C.*, (no Post Office or State given,) says: "I have a cherry tree stump about five feet high, on which I wish to put a box of trailing and flowering plants, and at the foot some running vines. Can you name the best selection for this purpose.

[Assuming that our correspondent is in a locality where the winters are severe we would name the *Lonicera brachypoda* as one of the best vines for the stump. For the box on top, Lysimachia nummularia, Hedera taurica, Gold-veined Honeysuckle to hang over and trail about the edges: and inside, Geraniums, Petunias, and Mesembryanthemums, will make good summer blooming plants. The Madagascar Periwinkles, and Chinese Hibiscus are good things, but less common; and Dracœnas, the Irisene and Coleus, give a good effect to a basket of plants by their colored leaves.]

CABBAGE IN VIRGINIA.—A *Lexington, Va.*, correspondent writes: "Cabbage and Lettuce plants will not survive, in health, even ordinary white frosts on our rich clay soils; and wintering them in cold frames is out of the question. The reason, of course, is that our soils are too retentive of moisture. We have the same soil that is found in your Cumberland Valley. Can't you give the readers of the *Monthly* a dissertation on this subject?"

[This is a new idea to us. Can any of our readers explain the fact?]

THE WINTER AT WODENETHE.—*Mr. Sargent* writes that the effect of the winter on some of his valuable evergreens is most deplorable. Pinsapos, 12 feet high, Cephalonica, 18 feet, Lawson Cypress, 8 to 10 feet, Lebanons, 15 feet, and even Benthamiana, Bradleyi, Lambertiana Pines all as brown as snuff; most of last year's wood dead. My best Wellingtonias, 8 to 10 feet high, will lose all their foliage. In fact, nothing on the place looks green, except *Retinosporas*, which are perfectly hardy. Many old Rhododendrons were killed.

BURSTING OF SHOOTS IN WINTER.—*E.* says: "I would like to get the opinion of the author of 'some kinds of well tested Evergreens,' on the bursting open in severe winters, or throwing off a part of their bark, of some kinds, while the young shoots remained sound. The Tree Boxwood, Euonymus japonica, our native White Spruce, &c., are liable to these. I have always attributed it to expansion by cold.

I have propagated plants from the young shoots of plants so affected, and they grew as thrifty as cuttings from the same kinds plants not so affected.

I have often had old grape vines so affected, and have raised sound plants from their young shoots. The sap may be in motion in the stems when it is stationary in the shoots. That might cause expansion by cold.

EFFECTS OF WINTER.—A correspondent at *Kingston, Canada*, sends us the following very interesting paragraph: "The following remarks, of essential value, are curious, because of their antiquity, (one hundred years ago,) may prove acceptable to some of your readers. They are by "White, of Selborne:"

"In *sheltered* situations, my Laurustinus, Bay Laurels and Arbutuses looked, in three or four days, (of a very severe winter,) as if they had been burnt in the fire; while a neighbor's plantation of the same kind, in a *high*, *cold* situation, where the snow was never melted at all, remained uninjured. From hence, I would infer that it is the repeated *melting and freezing* of the snow that is so fatal to vegetation, rather than the severity of the cold.

It may, perhaps, appear, at first, like a paradox, but, doubtless, the *more tender* trees and shrubs should never be planted in *hot* aspects; because, thus circumstanced, they are disposed to start *earlier* in the spring, and to *grow on later* in the autumn than they would otherwise do, and *so* are sufferers by lagging or early frost. For this reason, also, plants from *Siberia* will hardly endure our climate; *because*, on the very first advances of spring, they shoot away, and are cut off by the severe nights of March or April."

How much may be accomplished by the keen, clear observation and close reasoning of one man. As a comment on this, I may add that, up here, near the North Pole, (as you more favored ones conceive of us,) we never lose a raspberry plant, red or white, once in twenty years; and that, save as a rare exception, we ripen the Sweetwater grape in the open air. I picked the last bunch of Adirondaes on the 21st of September ; and, I think, we can show you, in many parts of Canada, as fine fruits, grapes, apples, pears, peaches, gooseberries, strawberries, all grown in the open air, as in any part of the world ; not all, however, grown in every district of the country, but most of them everywhere—peaches only in the West.

Could you (yourself) not tell us something *new* about the management of cold graperies, as well as respecting summer (?) pruning of native grapes in the open air?

Obituary—Prof. Page.—Among the deaths for the month, we are sorry to record that of Prof. Charles G. Page, of the Patent Office, Washington, an excellent amateur horticulturist. To our readers he is known by some excellent contributions to our earlier volumes; and as the raiser of that beautiful rose "America," he was at one time famous everywhere.

BOOKS, CATALOGUES, &C.

Animals and Plants under Domestication—By Charles Darwin. Published in two volumes by Orange Judd & Co., New York.

So many works annually pass under the reviewer's eye, most of which serve only a temporary purpose, that it is a luxury to say something of one which is to last for many generations. Whether we agree with the writer or not,—whether we feel it our province to censure or praise—the reviewer still feels that his labor, like the author's, is not, at any rate, spent in vain ; for an original work excites thought, and leads to practical results in directions very different, at times, from the author's own aim.

This has been, particularly, the fate of Mr. Darwin's writings. They have been argued, defended, controverted, abused and praised. Thousands who have never read a line of the original, dispute on the merits of his views—and this very disputation brings out new facts and theories, which even Darwin himself could never have observed.

Darwin's great work was the "Origin of Species." He is not the author of the idea that species continually change. Lamark, the author of "Vestiges of the Natural History of the Creation," and others, had their theories of *Progressive Development* before his day. But they failed essentially, through beginning at the wrong end—arguing, as it were, from the unknown to the known ; whereas Darwin's great power lies in his facts. He infers very little as to what laws governed in the past. His great object is to display the principles which operate on the laws of change, at the present time, and if it is to be an inference that the same causes have operated through all time, he leaves the truth, or otherwise, of such a view to work itself out. If there be those, for instance, who prefer to believe that every form was made at once, and continue to reproduce themselves essentially the same ; if they choose to think that the *Oidium Tuckerii*, or mildew, or the rot, or any other modern grape disease bothered Adam in his first attempts to cultivate the vine after his expulsion from the garden of Eden : that the curculio stung his plums, and the knot poisoned his cherries ; that he had the gout in his toes, pleurisy in his lungs, rheumatism in his limbs, diptheria in his throat, and dreadful pains in his head, back, and all over ; and all the thousand and one ills in his own personal body, which, in the old adage and popular belief, mankind is supposed to be "heir to;" possibly, beyond thinking our great progenitor must be a very unfortunate old gentleman. Darwin does not seem to object. But he insists that, at the present time, it is apparent there are great changes continually (daily, nay hourly) going on ; that these changes are not accidents, but the result of law ; and he collects these changes together, and puts the facts forward in such a way as to draw from them the general rules or laws by which these changes are governed.

To show the vast importance of this work of Darwin's, it is only necessary to say, that all who read his works find their opinions modified ; the only question is as to the extent. If the reader does not agree with his author, he simply thinks he pushes things too far. Those who attack him the most violently have had their views insensibly changed, as is apparent to any impartial observer.

Let any one compare the literature of the present time with that of twenty years ago, in any department of science, or on any question of art bearing on science, and Darwinism can be traced through its every vein. The pulpit preaches Darwiniously, and the abstract theologian has seized on the same theories to show the unity of the human race, the brotherhood of man, and as the only solution of many mysteries, which, without the theories, have led to unbelief. It has brought Divinity home to us. We see it more clearly around and about us. We are made eye witnesses of the most stupendous of all powers—not only that which upholds, but that which creates. It is indeed very common now to hear Darwinism praised by clergymen of many denominations, as being amongst the most potent of weapons in their hands, for inspiring a religious feeling in the human mind.

With all of this, however, we, as horticulturists, have nothing to do, except as showing that a theory which has had such an immense influence in changing the whole current of human thought, must have considerable of truth for its foundation, and is well worthy of every man's careful study.

This work is a companion piece to the "Origin of Species." In that the author gives, chiefly, enough facts to outline his theory or, rather, the theories which must naturally follow from his statement of the facts. The present volume brings up the full facts—the main body well supporting the advanced forces.

Many hundreds of facts bearing on change in plants and animals are brought together. The origin of many races of cultivated plants and domesticated animals are marked out, with wonderful patience and scrupulous accuracy ; and it is remarkable how many an old theory is revived, and finds new life. The wearing out of varieties, for instance, which Knight so strongly contended for, and which so many moderns object to, must be correct if Darwin is right. And so of many others.

We do not feel the force of some of the facts as Darwin does. We cannot think *natural selection* has as much to do with changes as it gets credit for. Neither is it clear to our mind that changes must always have an useful object in the plant or animal economy to serve, in order to account for the occurrence.

Nature is a prodigal ; she brings forth thousands of seeds for which she has never any use. Millions on millions of grains of pollen float about that never serve any fertilizing purpose ; and in the venerated language of the text, the sun shines, and the rain falls, on the good and bad alike.

Form is no doubt a continuous growth, just as much so as the matter which form embraces. It is, in fact, absurd to admit that motion is a property of matter, and not of the form in which matter is clothed. However, the reader had better judge of the work for himself. There is no one who will not find the matter in these volumes of immense value to him in the every-day affairs of life.

Farming for Boys; by the author of "Ten Acres Enough." Boston: Published by Ticknor & Fields.

We know of a friend who will not let his sons study history, but he does not object to good fictitious works. The one, he says, lies ; the other has the merit of being generally founded on truth. Certainly history can be taught fictitiously, much better than in a dry state. More is remembered of Roman history after reading a play of Shakespeare ; or of English, or Scotch from Sir Walter Scott's novels ; than from Gibbon, or Hume to Macauley. Political movements, and social reforms work in the same way. Mrs. Beecher Stowe was a greater power than Adam Smith or John Stuart Mill ; and Charles Dickens has accomplished more than Fourier, Robert Owen, or other matter of fact, and yet abstract reformers. Theological romances like "Pillar of Fire," "Throne of David," or dramas like "Paradise lost," make a deeper impression than the naked facts of religious history, and so on through the long catalogue.

Agriculture has not had much of this great power vouchsafed to it. "Chronicles of a Clay Farm," in Europe, and the works of Donald Mitchell, the author of "Sparrow-grass Papers," of "Ten Acres Enough," and "My Vineyard at Lakeview," comprise about the whole list.

The present is a good addition to the class of works. We hope it will have a wide circulation. It cannot fail to make good impressions on many a boy who otherwise would be led away by the very common error that there is "nothing in farming. Money and fame only can be had in a city life."

DOMESTIC INTELLIGENCE.

PURSH'S JOURNAL.—The name of this early apostle of American botany is familiar to every American gardener, and lover of nature. Recently a journal of his travels has been discovered amongst some old papers in the possession of the American Philosophical Society, and a copy of it has been kindly made for us, by Mr. Thos. P. James. We shall commence its publication in our next.

PEA—DREW'S NEW DWARF.—Has proved one of the most valuable introductions of last year. It grows only one foot high, branching profusely and forming an erect, dense bush. The pea is of the largest size, of a bluish tinge, slightly shrivelled, and as sweet and delicious as the Champion of England, without the tough skin of that variety; medium early. It is very productive.

RASPBERRIES IN KENTUCKY.—A recent report of the Kentucky Horticultural Society, says:

In speaking of Raspberries, "The Philadelphia Raspberry, it should be noted, proved the last season to be hardy and prolific and in every way worthy of extensive culture as a late berry. Duncan's Kentucky Black cap sustained its previous good reputation, and should be extensively planted."

WHICH IS THE BEST WINTER APPLE IN CANADA?—Golden Russet is a very fine market apple, being even in size and one of our very best table apples, always commanding the highest price. Ribston Pippin is our most valuable apple to ship to a foreign market; it contains the most real virtue, is worth the most per bushel of any of our long list of apples; but it is not quite so productive, and not so hardy as some. King of Tompkins County appears to be the apple for the Dominion of Canada, an apple without a fault, according to some of our most experienced fruit-growers. If this is the case, why not plant it all over the Dominion? This is a subject worthy of our most serious consideration, and, unfortunately, those having the most experience are not the parties most likely to write on this subject.—*Canada Farmer.*

TREE PLANTING IN IOWA.—To encourage tree planting a recent act of the Iowa legislature exempts from taxation $100 worth of the real or personal property of the tax payer for ten years, for each acre of forest trees planted and cultivated, the trees not to exceed 80 feet apart, and to be kept in a healthy and growing condition, and $50 exemption, as above, for five years, for each acre of fruit trees, the trees not to exceed 30 feet apart.

APPLES FOR NORTHERN ILLINOIS.—The Illinois Horticultural Society after considerable interesting discussion, recommended the following list of apples for general cultivation in Northern Illinois:

Summer.—Early Harvest, Sweet June, Red Astrachan, Duchess of Oldenburg, Summer Pearmain, Red June, Sops of Wine, Early Pennock, Golden Sweet, Benoni.

Fall.—Keswick Codling, Lowell, Fall Orange, Haskell's Sweet, Richards' Graft, for trial, Dyer, Autumn Strawberry, Fall Wine, Snow.

Winter.—Fulton, Talman Sweet, Jonathan, Wagener, Minkler, Wine Sap, Ben Davis, English Golden Russet, Westfield Seek-no-further, Yellow Belleflower, Northern Spy, Roman Stem, Domine, Rawle's Jannet, Willow Twig, Perry Russet, for trial.

GARDEN OF THE KING OF WIRTEMBURG.—The King's summer residence is well placed, and surrounded by noble evergreen and deciduous trees, among which I notice a specimen of *Picea pinsapo* about twenty-five feet high, a Cephalonian fir, somewhat taller and a number of stately cedars of Lebanon. The gardener in charge, when he found I was from America, became quite affable and communicative, and escorted me through the hothouses and fruit gardens—but these I need not describe, they are nearly the same everywhere. The Moorish palace and gardens in another direction, are, as their name signifies, expressive of "eastern magnificence." The palace is filled with arms and armor, paintings and sculpture; the latter representations of such a character as could only be appreciated by one of an oriental education.—*Bucks Co. (Pa.) Intelligencer.*

FREEZING OF HOP ROOTS.—The National *Democrat* says, the hop roots in Jefferson Co., Wis., were severely injured by frost during the winter. [But this can only be in cases where they were set out late last fall. In such cases Asparagus or any other hardy root, will sometimes rot. Wherever the Hop root has been a year established it will endure the hardest winters of any part of the United States.]

CLERICAL LECTURERS.—A clergyman of Vineland, New Jersey, does not confine his usefulness to his own parishioners, but gives free lectures on botany, agriculture, &c., to all citizens of his town alike. We clip the following notice of this excellent example from the *Vineland Weekly*:

The Rev. Oscar Clute has set a good example by giving out some of the secular treasures of his well stored mind, which we hope some others, who minister on the Sabbath will follow in the week. If our ministers would not feel themselves worked to death on Sunday, and run to death with visitation on other days, but foster a taste for the beautiful in art and the true in nature, among their own church members, with the privilege to others of listening, they would find ample reward in the consciousness of substituting exalted taste, for morbid sentiment; truth for error in many minds on common topics; of enlarging the margin of their usefulness and the attachment of their congregations, and in deriving in their own persons from the recreation of a diverse study, such a measure of mental health, that their Sabbath duties would appear lighter, and the evidence of their usefulness as ministers greatly increased.

PLANTS USED IN TANNING.—Besides the oak, other plants are used. Catechu will produce four or five times the quantity of leather that oak bark will. A considerable quantity of this tannin is used, but the quality of the leather from catechu is not equal to oak bark tanned leather. The process is much quicker, and the tanner is able to save time by the use of catechu; nevertheless, the action of this substance on the leather is not satisfactory, as the leather is soft and spongy, and absorbs moisture.

Valonia is the fruit of a tree which is known by the name of "acorn cups." It comes from Italy, Turkey and the East Indies. The leather tanned with valonia is not liable to absorb moisture, and for this reason is preferred by many to oak bark; and presents the advantage of imparting to the leather a smooth, soft and nice texture, which is thoroughly impervious to water. Two pounds of this tannin will make one pound of leather.

Catechu is taken from a tree, Acacia catechu, which grows mostly on the Malabar coast. The sap or bark of this tree is boiled, the solution evaporated, and the astringent matter is taken by this process. There is another kind of catechu brought from the East, which is known by the name of gambir. This is collected on the shore of the Malacca; the wood, bark and leaves are boiled in water, and, when evaporated, there is added sago to give it a body; it is then dried in the sun, ready for use.

Five thousand tons of this catechu, better known as gambir, are annually exported from Rhio by the Chinese. It yields forty per cent. of tanning matter. This substance of catechu, or kassu, as the natives call it, has been introduced into Europe, but has not, as tannin, yielded satisfactory results.

Sumac is used for the preparation of Spanish leather. It is said to harden the leather. It is quite expensive, its cost varying from $100 to $150 per ton, and is chiefly used by the glazed leather manufacturers. Devi-divi is also used in tanning operations, but has the bad reputation that leather tanned by it is porous, and consequently absorbs moisture.

Birch bark is used in Ireland for tanning bazils. It contains 7 per cent. tanning matter. It is also used in France for making the fine red leather, and other fine kinds known as Russian leather.

Hemlock is principally employed in tanning in this country, and such leather is porous and absorbs moisture. It is likewise stiff and hard, and presses on the feet.

Elm bark is very generally used in Norway for making leather, and it is said the fine Norway gloves are prepared from the elm bark, and that the softness and beauty of the leather are attributable to this bark. The white willow is used in Denmark for the manufacture of gloves. Russia also uses this bark in the manufacture of fancy leather, and the leather being impregnated with the oil of birch bark, which gives it a peculiar, agreeable smell. It is a noteworthy fact that the Norway tanners use birch and willow in preference to oak bark.

France uses the bark of a species known as komes oak, a stunted shrub growing in the south of France. This species of oak is in clumps, and grows in height to about three feet. The shrub which is called coppice oak has roots of a yellow brown hue, and is very rich in the tanning principle, and is used in France for tanning sole leather of first quality.

Vaugrelin, by chemical analyses, found that kino contains 75 per cent of tanning property. Esanleck found that terre-japonica or gambir contains 40 per cent. White willow, according to Davy, contains 16 per cent; birch bark, 1·6 per cent; beech bark, 2 per cent; weeping willow, 16 per cent; sumac, 16 per cent; and sassafras root 58 per cent of tanning matter.—*Scientific American.*

Bayberry and Myrtle Soap.—Dissolve two pounds and a quarter of white potash in five quarts of bayberry tallow or myrtle wax, till it turns soap. Then add a teacup of cold water and boil ten minutes; scent with any fragrant oil and turn in moulds to dry. Let it stand in the moulds a week or ten days and then remove it. This kind is good for shaving and chapped hand.

Intelligent Agriculture.—Not often do the right men get in the right places in our public institutions, but the appointments of Dr. Rothrock to the Professorship of Botany in the Pennsylvania Farm School, and of Thos. N. Harvey as Superintendent of the branch school at West Grove show that good practical talent is not always at a discount.

AGRICULTURE AND HORTICULTURE.

THE TRUE FRIENDS.

By Mrs. Lydia H. Sigourney.

"They leave no sting in the heart of memory,—no stain on the wing of time."—Hon. Marshall P. Wilder.

Brown Ceres, one day with Pomona was meeting
'Neath Autumn's inspiriting smile,
So giving each other a sisterly greeting
They sat down to gossip awhile.

"I hope you're quite well, dear, this elegant weather,"
"How charming the country," they said.
"And how do you prosper,"—both speaking together,—
"With regard to your business and trade?"

"Look, where the rude thorn-bush and bramble were [springing
With fruitage the apple tree bends,
The scythe of the mower at sunrise is swinging,
And the song of the reaper ascends."

"Let us walk hand in hand, for no obstacle caring
Till vines o'er the mountains shall grow;
Its suit of green velvet, the brown heath be wearing
And deserts with plenty o'erflow."

"The gold in its mine, with excitement and wonder
May summon an emigrant band,
And the chariot of Mars, trample on in its thunder
But we're the true strength of the land."

"For us, no lorn wife in her cottage is grieving,
Earth welcomes us both in her prime,
No sting in the bosom of memory we're leaving,
No stain on the pinion of time."

FOREIGN INTELLIGENCE.

America the Worst Fruit Climate in the World.—A writer in an English journal who writes himself as a "Disgusted Britisher," seems, by the following epistle, to be somewhat of Mr. Sargent's mind about the American climate. There is nothing like hearing both sides of a story when we really wish for the truth:

"A careful and energetic person in the western part of the State of New York, some years ago, planted an orchard of Dwarf Pears. They were fine trees, well planted, and the ground in excellent order. For two seasons they did well, and promised handsome results, but there came one of those fearful winters, sometimes experienced in those latitudes, when the mercury fall to many degrees below zero, and out of nine hundred trees not six survived. The hopes of the planter were destroyed at one sweep. The intense frost had killed all the Quince roots; some of the trees had sap enough in them to open the buds, and then they went off as though a fire had passed through them.

Another cultivator had a plantation of native Vines, in number about four thousand. They had grown well for two seasons, and a similar winter to that just mentioned destroyed them all. The ground had frozen early in the autumn after heavy rains, and was surcharged with moisture. During the month of January a rapid thaw set in, and the plants were heaved up, and all the fibrous roots being broken, and nearly all above ground. Before they could be covered or replanted, the ground froze again; and as almost the whole plant, root and branch, was exposed to the action of frost and sun, the result was the total destruction of the vineyard.

Another fruit grower had a fine young Apple orchard, six years planted, and in consequence of

the severity of the weather, the field mice were very much put to it to find food. The result was that the vermin barked nearly every tree in the orchard, and most of them died,—and even the survivors might have gone too, for all they were worth afterwards.

An enterprising English farmer, who has had plenty of experience in the management of hedges at home, has been trying, for some years past, to grow a live fence around his garden, but all to no purpose. Do what he may, the mice find their way to the plants every winter, and girdle them more effectually. So persistent and so numerous are they, that the hedge project has had to be abandoned. His case is not a solitary one.

All these unfortunates are careful and tidy cultivators, and their mishaps have come upon them through no neglect on their part, but have been positively unavoidable, having been brought about by natural causes.

With an average temperature during the winter months of about 10° Fahr., a gardener can well imagine what an amount of boiler power and piping must be required to keep the frost out of glass structures—and at all the establishments with which I am acquainted, the fires have to be made up once or twice during the night. Then, again, a great heat must be kept up for fear of a sudden change outside, and the dryness of the atmosphere is productive of all sorts of insect pests. Nowhere in America have I seen such green, short-jointed plants as are to be found in English houses. During the winter, the American plants look drawn and pale in color.

As regards out-door operations, for at least 4 months in the year, not a spit can be turned, and crops of every kind must be under cover before the ground freezes; and it often happens that for the best part of six months stern winter holds everything with an iron grasp.

Then, when seed time comes, there is literally no time for work. Within a fortnight everything must be done, and it is then a long time to wait for the crops to come in, for there is no relay or succession of garden products through the winter as in England. The summer comes at once, and with it intense heat, and often protracted drought or else such violent rain storms as prostrate everything, and cause much damage to growing crops.

Then, the grower of fruit has the Tent Caterpillar, the Codlin Moth, the Curculio or Plum Weevil, the American Blight, the Fire Blight, the Peach Borer, the Gooseberry Caterpillar, and many other enemies to battle with. The grower of vegetables, the Striped Bug, the Chinch Bug, the Squash Bug, the Onion Maggot, the Cockchafer, the Cut-worm, the Sphynx Caterpillar, and many other desperate and resolute foes. The agriculturist has to fight with Rust and Smut, Hessian Fly, Wheat Midge, Cut-worm, Grasshopper, and many other pests; so that, in addition to the extremes of climate, there are many other enemies to meet.

Now, I do not mean to say these difficulties are insurmountable; but what I wish to show is this, that in running away from discomforts and adversities at home, we do not know how much greater we may meet by going abroad. After many years' experience, my advice to all is, STAY AT HOME."

Tree Mignonette.—Sow a pinch of seed in the centre of as many 3-inch pots as there are plants required. When the young plants are strong enough thin them by degrees to one plant in a pot, and that must be the strongest. Train that up a stake to the height required, pinch out all side shoots and the heads of bloom, but do not divest the stem of its leaves until the plant has attained its full height. To form a head leave about three shoots at the top, and pinch them in from time to time.

I have had tree Mignonette 4 and 5 feet high with heads 2 feet through, by sowing the seed as above described in August and growing the plants for twelve months, shifting into larger pots when required. These were handsome objects in the conservatory, and afforded many cut flowers all winter. For ordinary-sized trees the seed should be sown during the first week in May to bloom throughout the following winter. Different catalogues announce a giant variety for this purpose, but in growing the two I have found no difference.—Thos. Record, Hawkhurst, in *London Journal of Horticulture.*

Asparagus in France.—This is one of the leading vegetables in France. The following from the London *Journal of Horticulture*, shows how careful they are in selecting seed:

"Every grower raises his own roots by sowing selected seed. The largest and earliest ripened seeds are chosen. A bed of sandy unmanured soil is lined off, forming little furrows 12 inches apart, and the selected seed finger-and-thumbed-in at least 4 inches apart. After the rake has been drawn over all, the seeds will be 2 inches from the surface. This operation is done on a dry day in February. By the end ot March, a hoeing before the seeds germinate tends to keep the seed beds clear of weeds, after which the young plants soon begin to show themselves above ground. The end of April and the beginning May bring hot dry weather. A slight mulching with decayed manure is now applied. After this nothing more is required but a little hand-weeding and repeated waterings in very hot weather throughout the year. At the period when they may be termed yearlings with half an inch of growth, which will be about the end of March, is the time when the planting in the *Aspergerie* take place.

Camellia reticulata.—With good culture this is an admirable decorative plant. Although the blooms are after the character of Chandler's Elegans, in being anemone-centred, the large guard petals are so highly colored as to render it strikingly effective. It is somewhat shy as a bloomer, but if planted out in a good border and the roots allowed to ramify, it is sufficiently free to well repay its house accommodation. Even the double variety, of which I will speak in dealing with novelties, is not so much better as to justify the expulsion of the old sort.—*Gardeners' Weekly.*

Centaurea candidissima, or, more properly, *S. ragusina*, is a first-class American bedding plant, but keeps high priced, through difficulty of propagation. The following is from the *Cottage Gardener:*

"On the 10th of last October I lifted my plants of Centaurea candidissima, took off every side shoot that I could, cut off with a sharp knife the lower leaves, and inserted the cuttings singly in well-drained pots filled with a mixture of sound loam, with three parts sharp river sand. I potted the old plants in the same compost, placed them and the cuttings in a pit, gave a good watering to settle the soil about them, and kept them dry afterwards, with just sufficient warmth to prevent injury from frost. I have examined them from time to time, to see how they were progressing. I find to-day (March 4th), that they have all filled the pots with roots, and are ready for being placed in larger pots.

On the Law of Leaflet-Genesis, by Harland Coultas, Esq. ; communicated by E. Newman, Esq.—The blades of lobed leaves, the author observed, must be regarded as a composition of partially-formed and organically united leaflets. As the lobe represents that portion of the lamina of the leaflet which is completed, it follows that the terms bilobed, trilobed, quinquelobed, and septemlobed, express the number of leaflets of which the whole blade is a composition, and indicate the extent to which their formation has been carried. So also the words bipartite, tripartite, &c., are indicative of a still higher degree of development, and intimate that the entire blade of each leaflet has been nearly completed by Nature. In the digitate leaf each leaf-blade is fully formed, its separation having been carried down to the petiole, to which it is articulated. This articulation alone distinguishes compound from simple leaves. The passage from the digitate to the pinnate form is simply effected by the genesis of an axis or common support by the leaflets, which thus become separated and distributed on either side of that axis. The formation of this axis is considered by the author as the result of the superior vital activity of the leaflets of the pinnate leaf; whilst in the digitate leaf that axis is rudimentary ; simply because the leaflets are deficient in the vital power necessary to form one.—*Trans. of Linnœan Soc.*

The Fejee Islands are a group in the South Pacific ocean, 225 in number, of which about eighty are inhabited. The population has been variously estimated at from 130,000 to 300,000. Two only of the islands are of considerable size, Viti Levu and Vanur Levu. The former is 90 by 50 miles in extent, with at least 50,000 inhabitants and the latter 100 by 25, with a population of 31,000. The islands are most of volcanic origin, but there is no active volcano in the group. Earthquakes are frequent and hurricanes periodical and destructive. The islands are very dangerous of access on account of the shoals and reefs by which they are surrounded. Although very near the equator, the climate of the islands is not so pernicious to white men as might be expected. It is debilitating, but not deadly.

The mean temperature of the group is about 80° though in the interior great extremes of heat and cold are experienced. A temperature of 121° has been noted in Vanna Leon. In December, January and February the heat is very oppressive. February and March are the months most feared by seamen, and are called the "hurricane months." The soil is exceedingly rich and the tropical climate and abundant water cover the mountains up to their very summits with a luxurious vegetation. Plants grow with marvelous rapidity. Turnips, radishes and mustard, after being sown twenty-four hours, are above the surface, and in four weeks are ready for use.

Wallflowers, common as they are, are general favorites. We give the following from the London *Journal of Horticulture*, premising that cuttings of the double ones must be treated the same as seeds :

Sow the seeds in April cr early in May. Prick off the seedlings in an exposed place, giving them plenty of room—say a distance of 12 to 15 inches apart ; pinch out the top when they are 5 or 6 inches high, and by the autumn they will be fine bushy plants, their foliage resting on the soil, and with a top as flat and large as a plate. Such plants will be very different from, and much hardier and earlier blooming than those left to grow in a semi-neglected state, by being allowed to spindle in seed beds, receiving no stopping except too late in the season.

Pot some of them in the autumn, and place them in a light, airy house, bringing them on gradually, and in February and March they will present a rich appearance, have foliage curling over and half covering the pots, and from eight to twelve spikes of bloom, of the uniform height of 8 or 10 inches.

Such were my plants last spring, when, in a house gay with Camellias, Azaleas and Roses, they were admired by every one. Pot a few plants and try them ; but if not prepared they will be poor in comparison with those which have had a little care bestowed on their cultivation.

The double varieties are also good for the purpose—the yellow being especially useful ; but they do not flower so early as the common single—an important point ; neither are they so fragrant.—J. W.

The Culture of Tree Mignonette.—It is very easy of culture, and by exercising a little judgment in the sowing of a few seeds at different seasons of the year, and care in cutting away the dead flowers as they appear, it may be had in bloom, in the conservatory, every month in the year.

It may be formed into various shapes according to the taste of the cultivator. Some prefer growing it in the shape of a cone, with one plant in the centre of a pot, the stem of the plant tied to a neat stake, the side shoots regularly stopped and trained, and the flowers pinched off as they appear, till the plant has attained its desired height and size. Others choose to have five or six plants in a 32 or 24 sized pot ; and then these are very useful, and never fail to be admired at this season, and onwards for several months.

I have grown a few very pretty standard Mignonette plants, and as they are generally much admired, I will briefly detail their cultivation.

About the end of March seed was sown in several small 48-sized pots, placing 3 or 4 seeds in each. The compost used chiefly consisted of decayed turf pulled to pieces with the hand, but not riddled, intermixed with horse droppings passed through a fine sieve ; sand being added to keep the compost open.

In a mixture of this description, Mignonette seems to thrive well and bloom freely. When the seeds were sown the pots were placed in a cold pit ; and as soon as the seedlings were large enough to distinguish which were the largest and strongest plants, the best were selected to remain, and the others thinned out and thrown away. As soon as the pots were filled with roots, but before the plants became pot-bound, these were moved into 6-inch pots ; and in this size, single plants will form good heads of bloom if occasionally assisted with weak manure waterings.

Some prefer larger sized pots, in order to grow extra strong plants ; but I rather like 6-inch pots, for they can then be placed in a small vase, and used occasionally for dinner-table decoration.

When the plants were several inches high, a neat stake was placed to each to keep them erect. The side shoots, as they appeared, were carefully pinched off near to the main stem, carefully leaving one or two leaves at the base of each successive shoot to strengthen the plant, and keep the roots active. This I consider rather important, as, if the plant were denuded of all its leaves as the stem progressed, its health would become impaired, and premature decay would set in. Much the same course was pursued until the plants had attained the desired height.

As the plants became established they were removed from the cold pit, and placed on a bed of coal ashes out of doors. They were stopped at heights varying from 16 inches to 2 feet, and as the flower buds appeared, these were regularly pinched out, to force the plants to form a neat, bushy head, until about the end of September, when each was furnished with a profusion of shoots, which were allowed to expand their bloom. By pinching off the decayed blooms, the plants will continue to flower throughout the winter months; but to secure the perfection of fragrance, they require both sun and air, and, consequently, when convenient, should be placed in proximity to the openings by which the air is admitted into the houses.—QUINTIN READ, in *Cottage Gardener.*

MARECHAL NIEL ROSE.—There is no other Rose, except Isabella Gray, that could possibly represent Marechal Niel. I have bloomed contemporaneously and beautifully Marechal Niel and Isabella Gray. The points of difference seemed to me to be—Marechal Niel is larger, thicker in petal, easier to unfold, larger in foliage, and apt, late in the season, to rot at the neck of the stalk. Isabella Gray is a little smaller, fuller, more golden, narrower in the leaf, longer in opening, and hardier late in the season at the neck. An amateur, seeing them side by side here, told me that he could see no difference They were both lovely Roses. Both were bloomed here in the open garden.—W. F. RADCLYFFE. *In Cottage Gardener.*

HORTICULTURAL NOTICES.

THE PENNA. HORT. SOCIETY.

It has so happened that, on the past few meetings of this Society, our duties have called us elsewhere; and not being able to find any one who takes enough interest in such things to make any notes for us in our absence, we have had to pass them altogether. We may say, however, that the meetings are always interesting, and repay the members who give them attendance.

At the last meeting no exhibition was held, but Mr. D. W. Herstine, of Philadelphia, displayed a large basket of Strawberries, which delighted every one by their size and beauty, and which were produced simply by covering the plants in the open ground with a common hotbed frame—as we have often suggested in the *Gardener's Monthly.*

It is astonishing that this simple way of getting early Strawberries is not more general. Here, Mr. H. had an abundance of fine fruit before the plants in the open ground, without the glass, were in blossom—and before even Southern fruit is in the market here. No doubt this plan, on a large scale could be made very profitable—not to speak of the immense enjoyment every family might have, in Strawberries a month before the usual time, by the trifling cost of hotbed sash. The variety exhibited was the Stinger. These were much more highly colored than we have seen them in the open ground.

The Society intends to have a grand STRAWBERRY AND ROSE SHOW on the 16th (Tuesday) and 17th (Wednesday) of June, in their New Hall. These will be the specialties; all other horticultural productions will be on exhibition. We hope that Strawberry and Rose growers all over the country will exhibit—we will do our part in reporting the result.

Schedules of the varieties desired may be had of H. A. Dreer, or A. W. Harrison, Philadelphia; and where the exhibitors cannot themselves attend, the Fruit or Flowers addressed to Horticultural Society, Philadelphia, will be received and properly cared for.

MR. KNOX'S STRAWBERRY SHOW

AT PITTSBURG.

We understand that, in consequence of severe family affliction. Mr. Knox's Annual Strawberry Show is delayed till the 17th of June; but as the season is later than usual, it is as well; for we judge the various kinds will then be about in their prime.

These meetings are always interesting, and attract many from distant parts of the Union—as Strawberry discussions are always more animated when fine specimens of all known kinds are on hand for illustration.

The Gardener's Monthly.

DEVOTED TO

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EDITED BY THOMAS MEEHAN.

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HINTS FOR JULY.

FLOWER GARDEN AND PLEASURE GROUND.

The Rhododendrons, Spruces, and some other things, which looked rather miserable on the advent of spring, have been found to be more frightened than hurt. A friend, who commenced to cut his Rhododendrons down, supposing they were killed, was interrupted in his charitable labors, and never found time to renew them. The balance unpruned are now beautifully in bloom, although nearly leafless. Such a remarkable awakening to life we never saw and had no conception of.

It is refreshing, however, to feel that our climate is not, after all, as bad as we thought. Yet it is well to bear the fact in mind, in planning out beds for rare things, to keep them as much as possible from cutting winter winds.

The wet spring has sadly interfered with flower garden operations. Most of the planting has had to be done in wet soil. It is difficult to get earth well about the roots when wet. When the dry weather comes many plants will die. The best way to save a weakened tree is, to prune away a little—and as soon as the ground gets dry, the earth about the trees should be loosened up a little, and then pounded down hard with a paving rammer. This should also be done with flower beds. Hard surfaces soon dry, and the plants in them rapidly dwindle away.

It is a matter of surprise that hardy climbing vines are not more used in lawn decoration than they are. Their general use is confined to walls and screens. They are pretty objects trained as pyramids through our grounds. Rejected evergreens make good trellises. Larch trees afford the very best. A trellis maker could not turn out a better one. Of course the lower branches should be left a little longer than those above them.

Amongst the best of vines, are Clematis azurea, C. viticella, C. flammula, C. Virginiana, C. vitalba, Akebia quinata, Bignonia capreolata, Caprifolium brachypoda, C. Halliana, C. flexuosum, C. flavum, C. sempervirens (scarlet coral), C. Magnevillæ, Celastrus scandens, Periploca græca, Wistaria frutescens and W. magnifica.

Wistaria sinensis is too strong for anything but a strong trellis. For growing over trees it is admirable. Over some old Hemlock trees, in Germantown, it roams from fifty to sixty feet high, making a magnificent spectacle when in blossom. In making trellises, it is necessary to fix two cross-pieces near the ground, or, of course, the weight of vines will drag the stakes out of perpendicular.

Recently we recommended our lady readers to thin out their annual flowers. A few plants grown well do better than many stalks coming up in one place. Perennials are also improved by this practice. Especially the Chrysanthemums should be examined, and if the shoots thrown up are thickly together, some of them should be rooted out. If the flower shoots are layered into four or six inch pots, they make very pretty dwarf plants, that are well adapted to neatly ornament a room or small conservatory, where larger plants would be objectionable.

Fuchsias in pots should have the coolest position of the flower garden assigned to them.—They usually suffer much from Red Spider, which makes their leaves drop. The various remedies we have so often recommended should be applied. Frequent heavy syringings are particularly grateful to the Fuchsia.

Hollyhocks will be coming into bloom at this season. They have now become so much improved as to be one of the most popular flowers for the summer decoration of the flower garden. If the kinds are kept carefully separate, any particular variety will reproduce itself from seed. They may be more certainly kept pure by cuttings of the flower stem ;—each bud will make a plant. The seed should be sown as soon as ripe in a light rich soil, in the open air. If retained till late in the season they will not, probably, flower the next year.

The raising of new varieties of florists' flowers is an interesting occupation to the amateur. The process of hybridization, applies to all plants as well as to grapes ; but good improved kinds of some things may be obtained from chance seedlings. The finest and doublest of Roses, Petunias, Dahlias, Carnations, &c., should be selected, and as soon as the petals fade, they should be carefully removed, or they will cause the delicate organs of reproduction to decay before maturity. A flower may be so very double as not to bear seed at all, as in the case of the Gillyflower or Stock ; but if the pistil remains perfect, as it usually does, seed will ensue.

If we should happen to have a change from this continual rain, which prevails at this writing, Dahlias will require watering in hot, dry weather, which is done by making a small basin about the plant, filling it with water, and when it has thoroughly soaked away, some hours afterwards, the soil should be drawn back as lightly as possible into the basin. All plants that require watering should be similarly treated.

Amateurs may have some rare or choice shrub they may desire to increase. They may now be propagated by layers. This is done by taking a strong and vigorous shoot of the present season's growth, slitting the shoot a few inches from its base, and burying it a few inches under the soil, or into a pot of soil provided for the purpose. The young growing point of the shoot should be taken out in the operation. By the English mode of making the slit, a great number of the shoots will be broken and spoiled. Anything can be propagated by layers ; and it is an excellent mode of raising rare things that can be, but with difficulty, increased by any other.

We need scarcely repeat our frequent instructions how to trim hedges—if they have not been attended to, do it now. Make the base about four feet wide cutting with a sharp scythe up to an angle at the top five feet or so from the ground, so that there are but two faces.

Gladioluses are very liable to a disease like rust in wheat, which destroys its foliage. Sulphur is the best remedy ; and if this does not check its progress the leaves should be cut away as soon as the affection is seen, as it soon spreads through a full collection.

FRUIT GARDEN.

Where new Strawberry beds are required to be made that will bear well the next season, the very first runners of the season should be selected, and layered into small pots. In about three weeks they should be cut from the parent stem, and left to a separate and independent existence for a few days. After preparing the ground properly for their reception, the pots should be well watered and the plants turned out into the spots designed for them. They will then grow finely the present season, and bear surprising crops of fine fruit the next Spring.

A warm sandy loam is the best for a Strawberry bed. A low and damp one is, of all the most objectionable. Though warm and dry in one sense, it should be rendered capable of retaining moisture in the dryest weather, and this can only be perfectly accomplished by draining and subsoiling. If the latter is done three feet deep, all the better.

Unless in a very sandy soil, a very heavy dressing of stable manure is objectionable. Wood ashes, ground bones, and matters of a mineral nature are far more advantageous.

Strawberries for forcing are treated in pots, as we have already described ; but instead of being transferred to the open ground, when well rooted in small pots, are repotted into five or six inch pots, and these latter plunged in the ground to their rims in the spot the most favorable to Strawberry growth.

After having grown well, and when they show signs of having formed a good strong crown, they are to be taken out of the open ground and gradually ripened by withholding water,—taking care that it is not done so suddenly as to make the plants wither, or they will suffer much. Towards winter they can be set in a cold frame and covered with dry leaves for a slight protection from the frost till wanted. Many commence to force at the beginning of the new year, when they are brought into the greenhouse and must be set near the glass. A high temperature is fatal. 45° to 50° is sufficient for a few weeks, and 55° to 60°, when the fruit is fairly set. They love to be frequently syringed, and guarded against Red Spider, which is their greatest pest. Where there is not the convenience of a a greenhouse to force Strawberries, they may be had a few weeks earlier than usual by making a piece of ground slope to the south-east, planting out as already described, for garden culture, and then setting a

glass frame over them. The nearer the frame and glass can be brought to the soil, the better and earlier will the crop be. Protecting from frost in winter also adds to the earliness of the crop. The earliest variety to be had in the locality should be employed.

The thinning of fruit,—watching of insects, especially borers in Dwarf Pears, Quince, Apple and Peach,—and summer-pruning, are the main subjects of attention at this particular season. Where the soil is not very good, as may be noted by a weak growth of the trees, a surface manuring may be yet given with advantage. Every day's experience more decidedly shows the great advantages to the pomologist of this method of applying manure.

VEGETABLE GARDEN.

Beans and Peas may still be sown, if done at once, with a fair chance for a late crop. The earliest kind of corn may also be sown with a chance of its coming into use, if it escape the grub. Drumhead Cabbage and Savoy may also be set out still in good rich soil, where they wil yet have time to head before frost in the Middle States.

The main crops requiring attention now will be Celery, Endive for salad, and Turnips. The latter merely to have a few early. August being the season for the chief or staple crop.

So many hints have been given on Celery culture in our columns that we need not offer any here. There have been many ways recommended for staking and supporting Tomatoes. The finest fruit, and indeed, the heaviest crops, are obtained by allowing them to trail on the ground. The soil between the rows being first heavily mulched with short grass from the lawn mowings to keep the fruit clean. This method is coming into almost general practice in this neighborhood, through its tested excellence.

Where they grow too rank, and the branches mat too closely, they should be thinned out.—Nothing is gained by leaving many shoots grow together, either in this or any crop.

Beets may still be sown for winter use, if the crops sown last month are likely to be deficient.

COMMUNICATIONS.

THE IMPORTANCE OF DIRECTING GRAPE CULTURE TO THE PRODUCTION OF CHEAP WINE.

BY COL. J. H. SULLIVAN, SYKESVILLE, MD.

Read before the Pa. Hort. Society, April 7th, '68.

The rapidly expanding cultivation of the Grape in this country, notwithstanding so many failures and so much doubt of ultimate success, has become a question not only of public economy, but carries with it, also, an inquiry as to the moral influence of an enlarged production, and necessarily increased consumption of wine by our people.

With many, this inquiry begets apprehension of overwhelming evil ; with others, confidence and satisfaction as to the favorable effects, even in a moral sense, resulting from such increased consumption. The former class of minds refers to the association of wine (through all the historic ages) with debauchery and drunkenness; the latter, assuming that the fruits of the earth were designed by a beneficent Providence for the support, comfort and happiness of man, claim that a *perversion*, by adulteration or otherwise, of the essential elements of the grape, should not be brought in judgment against the use of *pure* wine, any more than the *convertibility* of cereal products into alcohol should militate against the use of bread.

It would be profitless to inquire how far the kinds of wine, which called forth the anathemas of the wise King of old, were modified by peculiarities of manufacture. It would seem, however, that our Saviour, in consenting to convert water into wine, saw no evil in its use. Indeed, the exercise of miraculous power in the case implies *approval ;* for his miracles were certainly not intended as vain or idle displays of divine authority. Some, also, of his most suggestive illustrations refer to the vine, as typical of fruitfulness, goodness and beauty.

It may be admitted, for the sake of argument, that the consumption of wine in *non* wine growing countries, is of but little hygeian benefit, and in many cases, of doubtful moral influence ; but into such countries wine is usually introduced as a luxury, and not as a healthful beverage or restorative. To suit the demands of those pecuniarily able to indulge in it as luxury, it is modified by manipulating and adulterations, which merely pamper the taste, instead of refreshing and repairing the wastes of the body, and thus tend to demoralization.

In such countries "The Wine Cup" is a generic term, and is typical of the temptations and evil influence of all intoxicating drinks. But in wine-growing countries the phrase has no proper synonym ; for, there, the universal testimony of travellers is to the effect that drunkenness is a rare vice, and, when it does present itself, is not often attributed to the use of *wine*. It is a matter of remark that, in the Hotels and Restaurants of France, and other wine districts of Europe, the guests, from non wine-producing countries, generally call for a class of "heady" and intoxicating wines ; while those "to the manor born" almost invariably use such as are less tempting to an intoxicated or corrupted taste, but really far more refreshing and healthful—the kind to which is given the term *vin ordinaire*. This preference for the lower priced wines is not confined to the poor or middle class, who might naturally be governed by motives of economy, but is equally shared by the wealthy and aristocratic, from hygeianic considerations.

With most of the laboring class it is a regular beverage at the table, taking the place of tea and coffee, as consumed by the corresponding class in the United States. The average cost of such wines, at first class hotels in Paris, is one franc per bottle ; and as used by the laboring and middle class, about 12 to 15 cents per gallon.

As thus illustrated, the habits of people who use wines that refresh without inebriating, brought in contact with the consumption of what is manufactured expressly to please the palate, regardless of the results, make the true point of divergence between the proper and improper use of wines as a beverage. For it seems that a taste and demand for some kind of beverage is universal with all races of men ; and the exhilarating sense resulting from what is taken to refresh and repair the wasted tissues of the body, becomes the origin of debasing habits, where the high cost of pure wine drives us to the use of a less expensive, but more dangerous, substitute.

Universality in the use of wine in the wine districts of Europe, is, unquestionably, the true explanation of the rarity of drunkenness in those countries ; but to undue universality of use, wines must be largely and cheaply produced. Philanthropy and patriotism both claim, from the intelligent and conscientious grape grower in the United States, the direction of his attention to the producing of wine cheap enough to take the place of the brutalizing drinks now so generally consumed. And as corollary to this, it is a question whether the production of *fine* wine, so ardently hoped for and urged by eminent horticulturists, as the great *desideratum*, should not subordinate itself to the other considerations. A fine wine would gratify the luxurious tastes of the rich ; and, like the fine wines of Europe, would be cellared solely for the use of the rich ; but this class of our population, having the products of all countries to choose from, can afford to defer the requirements of luxury in the presence of a great want—moral, hygeianic and economic—overshadowing the less favored portions of our people.

As a guide to grape growers, it is important to determine what are the characteristics of a wine which could be properly introduced for universal consumption. The following points would probably cover the necessities of the case, namely : It should have a well-defined taste ; should be of moderate strength, so as to keep, with ordinary cellarage, a limited period, *but not to be so good a keeper as to allow any inducement for the producer to hold for better markets;* it should *ripen* in the shortest possible time, so that interest on the capital invested should be rated at a minimum. The variety of Grapes from which to make it, should be thoroughly hardy, and of universal adaptability ; easy of propagation and cultivation, prolific and constant, even under partial neglect.

It is neither necessary nor desirable that any specific variety should be adopted, to the exclusion of others ; for in this, as in other matters, we must recognize a variance of taste even in the uneducated. Whatever the future may develope however, we have already *one* variety of grape—the Concord—that could respond pretty fairly to the indicated requisites. Of this grape, reasonably good cultivation will make 100 bushels to the acre—or say 400 gallons of wine. Allowing $100 for labor and interest on capital, this wine could be produced at 50 cents per gallon, and still pay a larger profit than nine-tenths of the agricultural labors of the country. And 50 cents per gallon would place it within the reach of the laboring classes of this country, as readily as 20 cents per gallon would perform a similar office in France or Germany.

But, while 50 cents per gallon would represent the nominal value of the wine, *universality of use* might not be achieved, unless the agricultural population should supply itself; which it could do with as much ease as New England farmers used to lay in their year's stock of cider, without feeling the cost of its production.

There is a very general impression that great skill in the manufacture, and expensive cellarage for the care of wine, are required. To make a *fine wine*, this is, doubtless, true ; but my own experience indicates that neither provision is indispensable in the manufacture of a good common wine—care and tidiness being the necessity first, next ordinarily good cellarage, and then letting the wine alone till it has fined itself, which will be within the first six months. Any time after fining, it is ripe enough for use as a *cheap* and wholesome wine.

So far my remarks have had relation to the moral side of the question ; but its economical features are not less interesting.

France, with a population not much exceeding that of the United States, has three millions of its people engaged in wine growing, with an annual production of about one thousand millions of gallons, and of two hundred millions of dollars estimated value. Here is a product nearly equal to the value of a cotton crop of this country, in the palmiest days of the South, and second to no other exportable production of any one country. It will be noticed that this vast interest evidently revolves, principally, upon the annual production of *cheap* wines ; for *they* must be the predominating feature to bring down the whole to the average of 20 cents per gallon, as the aggregate value of the crop indicates.

It may seem a good deal to assume that the wine production of the United States shall, within any reasonable period, equal that of France, either in quantity or quality of average product ; but with general similarity of climate, and a national energy that leaps towards results in one lifetime, which it may have taken centuries in Europe to accomplish, there is nothing to discourage the hope of a sometime rivalry with France in this specialty.

As a people, we are impatient of delay in results. In vine cultivation, much has been achieved, for a beginning ; but it is only a beginning, and it seems to me that the needs of the country can only be properly responded to by the rapid and large production of *cheap* wines, rather than by an impatient struggle for wines of such excellence as to satisfy the rich and the fastidious, but striking above the heads of the commonality

THE FLOWERS.

A friend hands us the following lines from an English source, justly remarking that it will assuredly interest many of the readers of the *Gardener's Monthly :*

THE FLOWERS.

When God to man a being gave,
'Twas with a garden fair;
His first-drawn breath was from a wave
Of odor-wafted air.

As visions, at his spirit's birth
The tender eyelids burst,
He saw from out his kindred earth
The flowers had risen first.

'Mid clustering vines and trees that wooed
His new created sight,
Were fruits for rich, salubrious food;
The flowers for his delight.

And these were fed from living springs
Baptized with holy dew;
And softly fanned by angels' wings,
In beauty while they grew.

They shone, a glorious volume spread,
For all his peaceful hours;
The first sweet book man ever read
Was of the leaves of flowers.

Pure thoughts of his Almighty friend,
With radiance from above,
Were on its countless pages penned
Its Author's name was Love.

When Adam was condemned to leave
His blissful native bowers,
To soothe him and the sorrowing Eve,
God spared them still the flowers.

For, quickly as an angel speeds,
Before them there had flown
Myriads of Eden's swift-winged seeds,
All earth with flowers was strewn.

Their smiles along the exiles' way,
And spicy breath they gave;
When cold in death and dust he lay,
They gathered o'er his grave.

When Christ to earth in meekness came,
With soul-redeeming power,
He chose a home which bore a name
Which signifies a flower.

The lily bells that beauteous hung
Where passed his infant days,
Had each a pure and truthful tongue
To give their Maker's praise.

And earthward as they lowly bend,
Like vials, o'er the sod,
They poured sweet odors as a cloud
That, mounting, rose to God.

The while on countless airy stems,
As censers, many a cup
Like gold, and pearl, and bright-hued gems,
Fresh incense offered up.

When by his lips the precept taught,
His Father's will revealed,
He chose, to image forth his thought,
"The lilies of the field."

And 'tis his church that, like the "Rose
Of Sharon," sweet and fair,
Or lily of the valley, grows
Alone beneath His care.

If thus our Saviour loved the flowers,
And thence pure symbols drew,
Must not a love like *His* be ours
While we to him are true?

If they delighted man before
His eye had dropped a tear;
Shall we not worship God the more
While they surround us here?

Made perfect by Almighty skill,
As they in Eden bloomed,
They brighten all our paths, and still
Our vital air perfume.

That book of thousand beauteous dyes
Presents his love and power,
Whose hand sustains earth, sea and skies,
Recorded in the flower.

DISCOVERY OF PURSH'S JOURNAL.

The manuscript Journal of the eminent botanist, Frederick Pursh, came into the possession of the American Philosophical Society, among some papers accompanying the herbarium of the late Dr. B. S. Barton.

An entry occurs on the first page of this manuscript, made probably by the executor of Dr. B., viz :"MS. Journal of a Botanical Excursion in the North eastern parts of Pennsylvania and in the State of New York. By an unknown person, who appears to have been a German, & a friend of the late Dr. Benj. S. Barton.

Found among the Books of Dr. Barton after his death in 1817."

Being the acting Librarian of the Society, this interesting little volume has recently fallen under my eye: and my attention was directed, by a gentleman who had previously seen, and casually read, the manuscript, to a remark which occurs under date of July 20th:

"Mr. Geddes brought me to a deep valley, about one mile from his house, where we ascended a steep, very rocky hill; there large masses of rock seem to be piled up or tumbled over one and another, in such a confused manner, that it has left large chasms between them, which sometimes appear like caves."

After enumerating a number of plants collected, he continues: "And what I thought most of, Asplenium scolopendrium. This Fern, which I don't find mentioned by any one to grow in America, I always had a notion to be found here, and indeed I was quite rejoiced to find my prejudice so well founded in truth."

And upon his reading the observations of Mr. Paine, in the American Journal of Sciences and Arts, for September, 1866, on the discovery of the Scolopendrium officinarum, by Mr. Pursh, and connecting and comparing the two paragraphs, the paternity of the MS. proved to be that of Mr. Pursh. But I find other confirmatory evidences of this fact. The Journalist relates, that he had written to Dr. Barton—had received letters from him on several occasions, conveying the means for prosecuting his explorations; and that he had consigned packages of plants to Dr. Barton from time to time.

To settle the point, reference is made to the following paragraph, in the Preface to F. Pursh's "Flora Americæ septentrionalis," p. viii:

"Within this period I had also formed a connection with Dr. Benjamin S. Barton, Professor of Botany in the University of Pennsylvania, &c., whose industrious researches in all the different branches of Natural History are so well-known to the literary world. . . . . . I was enabled, by the kind assistance of this gentleman, to take a more extensive range for my botanical excursions."

"The following season, 1806, (1807, evidently,—the labels on the original plants in the herbarium, also an entry in the MS., bear that date,) I went in like manner over the Northern States, beginning with the mountains of Pennsylvania, and extending to those of New Hampshire."

This Journal I propose to copy for the *Gardener's Monthly*, having obtained permission to give it publicity.

The terse, quaint, simple and peculiar language renders it the more interesting. It exhibits the character of the man in the light of an out-spoken kind hearted person. To alter and anglicize its idiomatic phrases—to correct the many misspelt words, or change the structure of the sentences, would deprive it of half its interest. I therefore purpose giving it *verbatim et literatim*, and conceive the perusal cannot fail to please, amuse, and instruct your readers.

Mr. Pursh was born at Tobolski, in Siberia, and was educated at Dresden. He resided in this country from 1799 to 1811, during which time he made various botanical excursions. He went to England and published his Flora. He returned to America, and while engaged in collecting material for a Canadian Flora, died at Montreal, June 11, 1820, aged 46 years.

THOS. P. JAMES.

JOURNAL.

May 26.—Prepared myself for the yourney, & but my things to the stage office, in which place I stayd over night.

27.—At 4 o'clock this morning we left Philadelphia, the stage being remarkable full of passengers & goods, which made it very disagreable travelling; the road about 25. m. from the city got bad & hilly; we brok down the stage twice, but lukyly without any injury to us; arrived at 10 o'clock in the evening at Easton. Took up lodging at Abraham Horn's Sign of the Golden Swan. All this day I dit not observe anything in flower what I had not seen about Philada.

28.—The cramp ride in so full a stage, & the unaccustomed shaking of the body by the bad, rough roads made me feel more sore & stiff as I would have been if travelled on foot. I delivered my letter to Judge Wagener, who promised to give me all assistance in his power. Crossed the Lehigh and ascended a very steep rock opposite the town; vegetation here seemed to be somewhat later than at Philada. In flower, Sisyrinchium mucronatum Mx.; Azalea nudifl., Cornus Florida, Cerastium vulgatum & glabrum P., Carex, 2 or 3 species; Arabis lyrata, Veronica arvensis & serpyllifolia, Arenaria serpyllifolia, Senecio obovatus Muhl., Viola palmata, pedata, cucullata, Erigeron pulchellum, Mx.; Krigia Virginica, Phlox subulata, Geranium maculatum, Oxalis corniculata, Potentilla reptans. This plant I never could satisfy myself about its species; it grows very common about Philada. on dry hills.

The hills about here are generally covered with Hemlock Spruce and Cedars, mixed with Oak. Beginning to flower—Hydrophyllum canadense, Arenaria setacea, Muhlb.; Scandix dulcis. Out of flower—Mitella diphylla, Arabis falcata.

On a walk up the Lehigh I observed nothing remarkable,—a few trees of the Nazareth Quercus macrocarpa, on a hill about two miles from town.

29.—Took an excursion up the Bushkill Creek. Observed the former plants, together with Aquilegia canadensis. Senecio obovatus very frequently occurs here without ray, & seems to be at first appearance a different plant. Cratagus glandulosa, Oxalis violacea, Convallaria polygonatum(?) & racemosa; Hypoxis erecta, a species of Silene, Lithospermum arvense in great plenty; a species of Viola with very long spur, not described, but if I am not mistaken I have seen this plant in the collection of Mr. Hamilton among the rariores of the mountains. In the same range of hills I observed another species, a much taller plant, & the spur shorter and thicker, which I supposed to be the V. debilis, Mx. The banks of this Creek are covered with Hemlock, Oak, Hickory, and here and there, Betula lanulosa. I found a few bushes of Dirca palustris, which I did not expect here. The banks are covered with Cacalia reniformis—Hypoxis erecta in flower.

30.—Mr. Wagner was endeavoring to get me an opportunity of getting my trunk forwarded beyond the Water Gap; about noon we found a wagon going that way & I sent it off, intending to go to-morrow the same rout. After dinner I took an excursion on the Yersey side, but observed nothing new. I ascended two very steep rocks below Easton near the river, which convinced me so much more in my Idea which I had made before, of the River Delaware having been of a much larger size in former ages then it is now. The bed of the river is plainly seen, & the fields on the east side are covered with rounted stones, similar to a river getting dry; those fields may extend about half a mile, & in some places a mile & a half, & are about from 20. to 40. feet higher than the highest fresh now showing. The rocks I had ascended seem to have been Islands nearly in the middle of the old river, & have all the signs of their sides having been washed upwards of 50. feet high from the water, if not a great deal more. These rocks are covered with ferns of the common sorts, & shrubby trees common to this neighborhood. The view from those rocks is most charming—the neat town of Easton with its surrounding hills, the junction of the Lehigh with the Delaware, on the last of which an elegant new bridge has been erected on the same plan as the one over the Schuylkill at Philada. & the view of the distant mountains over all this is most charming.

(*To be Continued.*)

HISTORY OF THE SOULARD CRAB.

BY JAS. G. SOULARD, GALENA, ILLS.

My friend, Dr. E. D. Kittoe, of this city, first called my attention to a notice of the Soulard Crab in the *Gardener's Monthly* for April, p. 126. Finding you did not know its origin, I take pleasure in informing you how it originated. Near St. Louis, some twenty five years since, a thicket of our common American Crab trees was cut down, and the ground cultivated two years. Culture being discontinued, another Crab thicket sprang up.

When bearing, one tree (the identical kind now called Soulard Crab) was discovered. The fruit astonished me, and I immediately propagated by grafting on the common stock, on which it thrives admirably, and disseminated it among my friends—a desirable novelty. There is nothing Siberian about it.

It is to me conclusive that this Crab is the offspring of an accidental hybridization of the Wild Crab by our common cultivated Apple. The tree, its habit, increased size of tree and fruit, and decrease of acerbity, convince me it is a hybrid: and, to my knowledge, is the first instance of such a cross. It is the most desirable of all Crabs I have seen. Adding sweetening, it is delicious when baked. It makes the most excellent preserves, jellies, &c., imparting its delicate taste and crab aroma.

It has been kept sound for two years with common care, I am informed. I know it will stand repeated freezing and thawing kept in a darkish place, and is agreeable to the taste of many for eating late in the season.

Excuse this hurried notice—I may say more about it, and of some seedling Apples and Pears, time permitting.

SLIPS OF THE PEN—MISPRINTS.

BY HORTICOLA.

The humoristic introduction in some of the numbers of the *Monthly*, to the question concerning the Liquid Grafting Wax, the recipe of which I published in the *Horticulturist*, gave me a great deal of pleasure, aside from the opportunity it affords of correcting an error which I have committed. The laborer being satisfied with nothing, although he had bargained for one-seventh of the proceeds from a piece of land he had worked upon, because his employer told him those proceeds amounted only to *one-fifth*, is certainly a ludicrous and funny picture, worth the error which caused its reproduction.

That I made the mistake there cannot be the least doubt. The recipe for preparing the liquid Grafting Wax, I succeeded, with a great deal of trouble, in obtaining from a friend in Germany. The German readers of the *Monthly* know that, in Germany, the word *ounce* is only common among physicians and druggists; in business, only the *loth* is used—this being the name of a weight of 4 drachms; so that a pound is said to contain 32 loths, not 16 ounces.

In writing for the American public, I had to reduce the *loth to ounces*; but having found that *two and a half ounces* of alcohol, (5 loth), recommended in the original recipe, made the mass less than semi-liquid, like thick paste or dough, and that, in this state, it had to be rubbed on with a flat piece of wood, I increased the proportion of it to 3½ ounces, equal to 7 *loth*, which I called *ounces* by mistake, arising from the change of the words and values. In the *Horticulturist* of 1862, p. 115 and 116, 7 ounces are printed, instead of 7 loth=to 3½ ounces.

Still, 3½ instead of 2½ was not sufficient to make the wax liquid to be laid on with a brush; I increased, therefore, the quantity of the alcohol, gradually, to 5 ounces, which makes the wax about right; in cold weather, 6 ounces will not be too much.

This improvement was correctly printed in the *Horticulturist* of 1863, p. 163. Had Mr. Mead, (the then editor of that magazine), made his next bottle according to this improved recipe, comparing it with the first, he would have been in the condition of the laborer. Certainly I do not blame him for endorsing my blunder, for he could not have been expected to waste any time in comparing and controlling the occasional statements of his correspondents.

As to *misprints*, the public know how difficult it is to see anything, of a certain length, printed correctly. There are so many very different causes at work, on the part of the authors as well as of the printers, that books *perfectly* free from such blemishes are extremely rare. The celebrated Hebrew Bible, edited by Van der Hoogt, is one of them. The proofs were *seventy-five times* read and corrected, by Christian as well as by Jewish scholars, until no error could be found. For a copy in my possession, the only one I ever saw, I would not take *a Thousand Dollars!*

And yet, even in this book, somebody (in the beginning of the present century) is said to have discovered three very slight misprints in three minute accents.

A second work without an error in it, is the "Works of Homer" in the original Greek, issued from the press of TAUCHNITZ in Leipsic. So confident was the publisher of the perfect correctness of the text, that he, in the public prints, offered a reward of a Ducat (a little over $2) for each and every mistake that might be discovered after the offer was made. He had to pay *twenty-three Ducats*, three of which a pupil of mine earned. TAUCHNITZ'S Homer is now absolutely correct.

In regard to myself, it would be unreasonable if I should complain, although I have often seen in print most curious things imputed to my pen, of which I never could have dreamt. In "Sketches from Aarau, in Switzerland," where I travelled a number of years ago, I intended to describe Zschokke's House. The heading of the paragraph, as written by me, read: "The Hungarian Hill—Zschokke's House." When I received the magazine in which my Sketches were published, I was not a little astonished and chagrined to find my heading (in its latter part) changed. It read, in print, "Zschokke's *Grave*."

This happened when the venerable Zschokke so well known all over the civilized world, was alive and in unimpaired health. When I saw him for the last time, a few years after his grave had been paraded in print, I called his attention to the misprint. He had noticed it before, and we had a hearty laugh, taking it as a good omen, which it proved to be.

My friends, knowing my alphabet, do not complain about the illegibility of my handwriting, but others do. An invitation to establish a Horticultural Society, written and translated by me into the German, was presented to an American clergyman; he could not tell the English from the German text, written by the side of it, notwithstanding the great and radical difference of the German letters from the Latin (English.) If therefore, printers and proof readers are sometimes at a loss to make out certain words in my manuscript, and, consequently, make me say what I did not think of, I willingly excuse them.

In regard to proper names, however, and quotations from the Latin, or any other foreign language, the case is quite different. I write such names and quotations with a great deal of care, so that any one that knows the alphabet may be able to read them. Misprints in such have an ugly look, betraying not only carelessness, but what is worse, ignorance. I was horror-struck when I saw the two lines printed at the end of one of my contributions to this magazine. They were taken from Horace, and appeared so much mutilated that there is hardly a word in them without a gross error.

In Mr. Husmann's Book on the "Culture of the Grape vine and on Wine Making," a Mr. *Petiol* is mentioned. The same *Petiol* is found in one of the Agricultural Reports; but the name of the French gentleman is not *Petiol*, but PETIOT.

Dr. Warder, in his "American Pomology," p. 98, is made to say that LEPORT invented the Liquid Grafting Wax, while it is well known that the name of the discoverer is not "Leport," but *L'homme-Lefort*, as Carriere spells it ('5 *Guide pratique du Jardinier multiplicateur, p.* 258,) or *Lhomme-Lefort*, according to Dubreuil, (5 *Cours Elementaire*, etc., Vol. I, p. 103.)

I leave off here, though I could fill many pages with similar matter. For their own, as well as for the honor of this country, I wish that compositors and proof readers would exercise a little more care.

But why should he complain. after all ? There is a single copy of the Bible in existence, preserved in the immense library at Wolfenbuttel; all the other copies were carefully destroyed. In this Bible there is a misprint so unique and extraordinary, that it surpasses all others combined. In the Sixth Commandment the word "not" is left out.

COST OF KEEPING HENS.

BY MR. J. C. THOMPSON, TOMPKINSVILLE, STATEN ISLAND, N. Y.

As there is a constant clamor against "biddy" about her "eating her head off," "Poultry don't pay," etc, permit me to say a few words in behalf of the ever faithful "biddy." In the first place "biddy" is charged with everything that is bad: she is noisy, mischievous and gluttonous; in the next place, she is seldom indeed credited with an ounce of the nice food she daily produces for our tables; she is often half fed and less cared for, and yet under such unfavorable circumstances will give her careless owner at least 100 eggs a year and often 125 to 150 lbs. But say only 100 at 8 to the pound is 12½ lbs. of food, returned to her careless owner, for less than a bushel of grain consumed in a year, (if she is lucky enough to have it set before her). Allowing her to weigh 5 pounds, she returns her weight in food two and a half times, and is yet on hand at the close of the year ready to reproduce her kind, and repeat her weight in eggs more than twice in the coming year.

Quite unlike the "grunter" she is not "done for" "salted down" and converted in a "non-producer" for the future. She still lives, to give a good account of herself in daily supplying our tables with food of the best quality, while poor Porkey is "done gone" forever. Now I repeat that "biddy" gives more weight of food (and of the best kind too) for the grain consumed than any other animal kept on a farm. What I ask is that a strict account be kept of all the *eggs laid* as well as the *food consumed*, and if at the close of the year the result is not satisfactory then all would be justified in discarding 'biddy's' society and turning their grain over to the "swinish multitude."

For the information of them that don't know, let me say that no hen that has a decent run, eats a bushel of grain a year,—all my tests have been made when they could get only the grain fed daily. Large fowls like Brahma, eat 2¼ oz. per day; small birds like Leghorns, eat less than 2 oz. a day; that is about seven half pecks of grain for the smaller birds, and a bushel for the large kinds; and then too we must not forget that biddy gives us a fresh mess every day, besides furnishing us with a companion for the pot or oven once or twice a week, while poor porkey gives us fresh only one a year.

I must close by stating what my stock gave in eggs for Jan'y, 1868. 120 hens give 620 eggs at 50 cents per dozen, wholesale price, 51½ cents dozen, $25,75; cost, third of a bushel of corn per day, at $1,50 per bushel, $15,50. To biddies credit for Jan'y., $10,25.

HORTICULTURAL NOTES FROM BALTIMORE.

BY MR. FEAST.

In the November No. page 347, is an account from England of the Barrington Peach bearing Nectarines and Peaches on the same wood. I had several specimens last season of Nectarines, half Nectarine and Peaches, striped as though they had been painted with a rich mahogany colored paint, on two Honest John peach trees; the location a rocky knoll.

In 1864 the upper branch of one of my common Moss rose trees produced a branch of single light purple roses, the capsule very large, like the Boursaltiana. In '65 a second branch, and in '66 the whole stem; this part is all dead leaving a sucker; wood like parent. I had the seed from the fruit sown at the nursery and had several plants from it, but unfortunately got lost. The White Clifton Moss was a sport from the common Moss, originated at Clifton, near Bath, England. The soil on which the plant was growing was calcareous and light. We can see these changes in trees and plants, fruits or flowers, but to pretend to lay down any rule or say why, is impossible.

The Camellia, Feastii superba, was a sport from Feastii. I took of the branch and grafted it on a stock, and by that means secured the variety. It is like Lady Humes. We had several sports about that time in the striped varieties, but none worth saving; to say that it was any particular soil or treatment being the cause of these changes would be assuming a position that I have no ground for, though at the same time having the entire charge of them.

Shortly after the war with England, the New Castle Thorn or *Crætagus Elliptica* was largely planted round the City of Baltimore for live fences, which made as good a hedge as the English Thorn; these did well until 1834, when vegetation appeared to be exhausted; the year following the hedges were nothing but a mass of black knots, like the black knot on the plum tree. Last fall, on passing along where I knew that many of these thorns had been planted, I found them [the knots ?] but in one locality, and that was in a valley on the margin of a belt or ridge of land taking its rise at the Relay House on the B. & O. R. R., running north, crossing the Frederick road east of Catonsville, and approaching the City at the Park. In this Park there is the best representation of the Sylva of America, excepting the Mountain Pine and seaboard productions, that I have ever noticed before.

On this belt of land the fruits of every description are more perfect, and the Pear less affected with blight, than any other section I am acquainted with. I supplied a friend with plants of the Melon Strawberry which, at that time, was considered one of our best varieties. I could never do any thing with it, being always abortive; whilst with him the reverse, and the fruit always superior.

Some thirty or thirty-five years back, being at Hunting Ridge, the estate of the late James Swann, located on this Ridge, I remarked to him, "why did he not have that heap of manure moved away, and spread on the grass?" His answer was, "Why that's soil from the bottom of the well, 40 feet deep."

This heap of manure, as I thought it was, was covered with high weeds. It was marl of some kind.

Within the last few years, the Black Knot, as it is called, has destroyed the Cherry and Plum trees around here. When it first made its appearance, I had a sucker growing near the house—it was 4 feet high, with six branches near the top, growing horizontally. With this tree I concluded to pay particular attention as to the effects of the disease. In the first week of June these branches were eight to ten inches long. On examining one of them, I found the bark ruptured an inch long, one and a half inches from the stem. Some few days after the rupture had filled up at least one eighth of an inch above the level of the bark. I cut this out nearly to the centre of the wood, at four different times, until the cessation of the sap. Every one of the shoots were affected like this, but the same distance from the stem, and all on the under side.

HERBACEOUS PLANTS.

BY WALTER ELDER.

Herbaceous flowers form a principal feature in the decoration of gardens and pleasure grounds; some of them are always in bloom, and constantly varying in appearance by the development of new shades. In European countries, they are frequently placed in compartments by themselves,—in long and broad borders, or in large beds, and so arranged as to keep up a bloom all the season, and make a diversity.

Many of the dwarf species are used as edgings—such as Daisy, Saxifraga, Violet, Auricula, Polyanthus, Primrose, Phlox subulata, Gentiana, Sedum, Iris, &c.; but with us, the most of these need the protection of a frame, with sash and shutter, during winter. Those that are hardy with us are of a more stately growth. Dielytra or Dicentra is among the first to bloom, and is succeeded by Pæonia. Early Vernal Phlox, Plumbago, Iris, Dianthus, Antirrhinum, Aquilegia, Lychnis, Delphinium, Acomtum, Dracocephalum, Pentstemon, Veronica, Yucca, Campanula, Digitalis, Eupatorium, Spiræa, Funkia, Aster, (Phloxes continue in bloom for 6 months,) Chrysanthemum, Dahlia, &c., keep up a constant and varied bloom from March till December. Hollyhocks and the large growing Lilies are also mixed among them.

Other bulbous plants are generally grown in beds by themselves; but, when planted in patches among the others, they make a very attractive show. They all flourish upon almost any kind of soil, but should be kept free from grass and weeds, and each plant, or patch of bulbs, should stand so far from its neighbor as to show itself to advantage, and form a thing of itself. The most dwarf should be next to the walks, and the tallest farthest off, so that none will hide the beauties of the others.

The great variety of beautiful and fragrant Annuals are too numerous to mention: and among the tender kinds are Pelargonium, Salvia, Petunia, Verbena, Heliotropium, Cuphea, Lobelia, Maurandia, Thunbergia, Ipomea, &c., which, when planted out in May, keep up a constant bloom until November, when they are dug up and potted, and are sheltered in the greenhouse all winter.

THE CHINESE YAM.

Dioscorea batatas.

BY W. R. PRINCE, FLUSHING, L. I., N. Y.

This Yam is a native of the northern limits of the Temperate Zone, and will flourish in the coldest regions of our country, and of the British Territories, and will endure everywhere the winters in the open ground. Its produce is more than double the crop of any Potato, and it never rots. It will flourish best on the now useless sandy lands of New Jersey and Long Island, and of the entire coast range, and it will also succeed on any other soil but a stiff clay. It does not require replanting annually, but reproduces abundant crops from the fragments and small tubers which are left in the earth. There can be no fragment, however diminutive, that will not vegetate. From tubers, the roots attain ten to twelve inches in length, and weigh four to six ounces. From sections of the root, such as used for the regular crop, the roots attain eighteen to twenty-four inches in length, and weigh from half a pound to one and a half pounds, and often more.

A plantation of this Yam is in China, termed, "A permanent Magazine of Food," and the roots may be dug fresh for use daily, from early spring to winter, thus furnishing new Yams continuously. It is more palatable than the best Mercer, or any other Potato. Its taste and flavor are intermediate between the finest Potato and Arrowroot, of an exceedingly delicate farinaceous character, and, like to the Potato, it is devoid of all insipid sweetness. It is free from any ligneous or fibrous substance, and possesses the peculiar property of not being subject to rot or decay, but will remain perfectly sound and excellent in a dry state for a year, thus rendering it exceedingly valuable for long sea voyages, and for the prevention of scurvy. It is much more nutritious than any other edible vegetable used by man, and more so than wheat or any other grain. It is the only vegetable of all the earth, which combines an ample portion of Azote, the grand constituent of animal substances which impart vigor to the muscular power of man and beast; and it is by the possession of this essential equivalent in this esculent, that the use of animal food is rendered unnecessary by the Chinese and Japanese nations, whose immense populations comprise nearly one-half of the inhabitants of our globe.

The culture of this most estimable and productive of all vegetables, on the sandy soils of the south side of Long Island, and throughout the sandy region of the Atlantic portion of New Jersey, which are of a character precisely adapted and congenial to its growth and development, and where the crops will consequently be much greater than in other locations, must impart a value to those lands which no one has yet anticipated; and they may soon command higher rates than any of the firm soils of the north side of the Island, or of the upper section of New Jersey.

The ground for planting tubers should be rendered mellow and permeable to the depth of fifteen inches, and for roots to the depth of twenty inches. Old, decayed stable manure, or decayed peat, or wood mould, should be mixed moderately throughout. Over-manuring is injurious, and Poudrette is unsuitable.

The season for planting is as soon as the freezing has ceased, and the ground has become settled. *Tubers.*—These should be planted in a double row—the rows 12 inches apart, and the tubers ten inches apart in the rows. *Roots.*—The sections of root should be about 1½ inches in diameter. They should be planted in a double row—the rows 15 inches apart, and the roots at 12 inches apart in the rows.

There is no plant whose culture is more simple and easy than that of this Yam. Its extensive cultivation promises to our country a vast and inexhaustible resource, derived from such soils as have hitherto been the most unproductive and unpromising. It will supersede, and far more than replace, the failing and uncertain crops of the potato, with the addition of this potent and comprehensive fact, that this esculent will succeed and yield ample and reliable crops, throughout all the northern section of our country, where the Potato never has been and never can be grown.

[We endorse much of what Mr. Prince says of this root. We do not know why it is not as popular as any other vegetable. Most persons we believe like the flavor of the root. Most likely some of its unpopularity arises from its roots running so deep, which makes it impossible to get them up with a plow or any machine now in use; but for garden or spade culture this is not an insurmountable objection.—Ed.]

GRAPE GROWING IN THE WEST.

BY MR. E. FRYER, NAPERVILLE, ILL.

The spring sales of grape vines have just closed here and they have been unusually great. Judging from the reports of many others engaged in the trade in the west, it is fair to assume that never before in this country has there been so great a number of vines sold in any one season as this spring. The demand was great, but the supply was equal.

Vines are now produced in such immense quantities, and at such low rates, that cuttings are no longer used by amateurs or beginners. Since the award of the Greeley prize to the Concord, that variety has been in much greater demand than any other,—so much for a name. A well ripened Isabella,—as it ripens here—is a grape of much better quality. The Delaware and Hartford Prolific are in much demand on account of their earliness. The Iona is less popular than it has been. I believe this variety has been prematurely condemned and has not yet had justice done it. It is certain that, so far as the public knows, there has not been a grape of so fine quality produced among all our native seedlings. A few vines planted for fruiting two years since, give promise of fruit this season. As a test of the healthiness of the vines I may mention that, in August '66, I had a large number of Iona and Delaware vines growing alongside each other, propagated from single eyes the spring previously, and in every way treated alike. A succession of cool nights after very warm weather, during which the thermometer jumped from a night temperature of 78° to 44°, produced mildew all over the block of Delaware, while the leaves of the Iona were uninjured and remained so to the end of the season. This is a particular instance in an unfavorable season. The regions hereabouts, and extending into Iowa, are tolerably free from mildew. A small vineyard of Delaware

bore a fine crop last season, and carried their leaves through till late October frosts. There can be no doubt if the Iona gets as fair a trial as the Delaware, that it will in time become more popular than the latter variety.

Rebecca is the most reliable of the white grapes, certainly much more so than Cuyahoga, which is a very poor grower. Adirondac has proved a failure. Protected in the ordinary way with straw or littery manure, the roots winter kill; with extra protection, it will survive; such a grape is not fit for general cultivation. Diana is a splendid grape here, and on gravelly or poor soil produces fair crop of fruit; but many make a great mistake in planting it over rich soil, which cause an immense growth of wood, but little fruit.—Some may smile at the idea of suggesting to plant grapes on *poor* soil. It must be understood, in a western sense—the almost unbounded fertility of our soil justifies it.

Many are going into the business of grape growing, and I presume those who make a business of it will reap their reward. The severe cold of this winter, and the late spring frosts are the most serious disadvantages. The long and generally fine fall seasons peculiar to this region are particularly favorable for the ripening of the fruit. I think the west, north and south are more free from grape mildew than the east. It would, perhaps, be interesting to many to know if this is really so, and to what extent. There are probably enough materials published, if some experienced grape man would collect them together, many useful facts might be placed thereby before the public.

[It might be as well to remind our readers of what we have said in the past in reference to the value of a *dry* soil for the grape. Poor soils are very often dry ones and no doubt our correspondent attributes to poverty what is rather due to freedom from water. What our correspondent says of the Iona is also just. We do not believe their is any inherent disease in it; and when it can be had in perfection, it is to our taste better than any native grape, and—though perhaps our taste may be considered vitiated—equal to any foreign grape. It is well worth taking a little extra care to have it good, and it certainly requires more care than most other grapes. From our last years experience, we believe that entire freedom from water lying at the roots would be all the extra care it would want, and we should very much like to hear of any experiments with it on *raised banks.*]

BOTTLING FRUIT.

BY MRS. C. E. M., VINELAND, N. J.

The increased attention given during the last few years to putting up fruit for winter use, adds very much to good family economy, as well as increases the comforts of many a humble home. I have had such gratifying success in my little way, and yet see so many failures in the experiments of my friends, that I feel a temptation, not to be resisted, to offer you a few lines on the subject for your valuable *Monthly.*

I have for many years been in the habit of using glass jars, but as you know of late years many have got to using tin cans. This is on account of cheapness. They cost less in their first cost, and it is also given out in their favor that they never break. But the fruit looks so pretty in the glass jars that I never liked to give them up, and though they are not now much in use among my neighbors and friends, I stick by them yet. The cracking part I have overcome. I do it in this way. It used to be customary and is for that matter, customary yet, to put the glasses into cold water, and gradually heat them up to near boiling point, when the heated fruit is put in and closed up. But with all my greatest care glasses often broke. Now I get a wet towel, double it four or five times, and set the jar on this while pouring in the warmed fruit. I adopted this plan all the last season, and did not have one glass to crack. I saw the hint in some newspaper, but cannot recollect where. It seemed so unreasonable to cool them, instead of warming them, that I was at first afraid to try it, and very reluctantly experimented with two. As they succeeded well, I did all that way last summer, and shall continue to do them this in the same way. This objection against my favorite glasses is thus entirely removed, and their remains nothing in favor of tin, but the first cost. I use many different patterns of jars, all of which have elastic bands around the stoppers, some tightened by screwing, others by a clasp. All this is soon done, and the bottles soon opened when wanted, which is an advantage over tin, for which cement has to be prepared, and which takes time to open,—and then the superior cleanliness of the process in the jars, is I think much in their favor over tin.

NOTES ON THE HARDINESS OF SOME TREES AND SHRUBS.

BY A. C., PHILADELPHIA.

It will interest many to know what kinds of trees will withstand such combined influences as high wind, with low temperature as we had last winter. The following notes are made from a collection growing together on a few acres of rather low, but well drained soil near Philadelphia:

NOT HURT.

Pinus—Pallasii, excelsa, tuberculata, Banksiana, Pyrenaica, Monticola, mugho, montana, laricio, cembra.

Picea—nobilis, pichta, Parsonsi, pectinata, cilicica.

Abies—excelsa, Menziesii, orientalis, Nordmaniana.

Thuja—Parsoni, filipendula, Booth's dwarf, Sibirica, aurea, plicata.

Torreya taxifolia (shaded on south side).
Taxus baccata fructu luteo. "
Juniperus squamata, "
tamariscifolia. "

Cupressus Lawsoniana, (erect.)

Taxus—elegantissima. *Retinospora*—obtusa.

All the *Mahonias*, if shaded on the south.

Magnolia— Lenne, Norbertiana, Soulangeana, conspicua, acuminata, macrophylla.

Tamarix—Africana, Caspica.

Larix or *Abies*—Kæmpferi or japonica, name unsettled, Dahurica.

Forsythia—viridissima and suspensa.

Viburnum—prunifolium, rugosum, plicatum, lentago, and cercis japonica.

Andromeda arborea, Berberis purpurea, Lonicera tartarica rubra, (very handsome.)

Ligustrum—ovalifolium, buxifolium.

Cornus—mascula, sanguinea and stolonifera.

Salix caprea pendula, (Kilmarnock Willow.)

Stuartia pentagynia and virginica.

All the Deutzias. (Deutzia crenata flore pleno is very fine.) All the Lilacs.

Callicarpa cœrulea, Alnus cordifolia and maritima. Prunus triloba. All the Spiræas, except Lindleyana. Sophora japonica, Rhamnus (syn. Frangula) Caroliniensis.

Catalpa Himalaica, Kæmpferi and Bungei.

Halesia tetraptera and diptera.

Planera acuminata, Juglans sinensis, Cladrastus tinctoria, Acer rubrum colchicum, Tilia argentea, Cerasus padus, Celtis crassifolium.

Gleditschia—horrida, mimosæfolia, caspica.

Ilex—opaca, (when shaded on south,) laurifolium, (sheltered on north.)

FOLIAGE BROWNED.

Slightly—Picea cephalonica and amabilis, Podocarpus japonica, (when not well shaded on south); Libocedrus decurrens, Pinus edulis, Retinospora pisifera, P. Lambertiana.

Very much—Picea grandis, pinsapo and firma; Cedrus Libani, Pinus Benthamiana and Jeffreyi.

Pinus Massoniana, 1 specimen very much, another very slightly; both equally exposed and within 15 feet of each other, on same level.

Very much—Cryptomeria japonica and C. japonica Lobbii, both shaded. (Usually stand well, when shaded on the south.)

HURT.

Badly—Retinospora japonica, Taxus stricta, rigida and erecta, Abies Douglassi and Smithiana, Thujopsis borealis, shows some feeble signs of life; Cephalotaxus Fortunii and drupacea, not quite dead; Pinus ponderosa (small specimen), Cunninghamia sinensis, in a sheltered place, dead; one which was tied up loosely with straw was not hurt. The former exposed on south and southwest), Juniperus oblonga pendula (not well shaded on the south), and suecia, (where much exposed on the Northwest); German Tamarix mostly killed, some shooting from the root. The African not materially hurt; Taxus ericoides, (exposed to south sun), Magnolia grandiflora ferrugina, so badly damaged that I took off all the branches. It is shooting freely from the trunk. (Pretty well shaded on south, but not sufficiently protected from north winds); Ilex aquifolium, (needs shelter on North, and shade on South side.) Thuja ericoides, (when exposed on South side.) Euonymus japonica, " " " Cedrus deodara, in feeble health. Thujopsis dolobrata, so badly damaged that I took off all the branches. It is shooting from the trunk. Itea Virginica. Retinospora ericoides, all wrecked.

KILLED.

Ilex cornuta, (well protected except on south side;) several Swedish and Irish Junipers; Vitex agnus castus, killed to the ground. Beginning to shoot from root. Ivy, English and Irish, on east wall of house, foliage quite killed; on west and north side, not hurt.

My largest Taxus baccata elegantissima, heretofore a robust plant, killed on southeast side quite into the centre. It looks as if a cave had been dug into it. On the east it is shaded by a Cedar. The warming sun first struck it on the southeast. On the north, though exposed to the wind, it is unhurt. Cupressus Lawsoniana, (drooping variety), killed.

One of my F. Suspensa capsuled abundantly last year, but matured no seed that I could discover. It is very feeble this year. Its neighbor 3 feet off, which bore a few abortive capsules, is in vigorous health.

EDITORIAL.

OUR PLAN OF MAKING CURRANT JELLY.

A lady tells us that she continues, every year, to make Currant Jelly after a recipe we gave in our second volume, and that she has never met with any plan that anywhere near equals it. So many, she says, know nothing of it, and she is so often asked for a copy of it, that she thinks we would be favoring most of our lady readers by publishing it again.

She says she feels an interest in the matter of currant jelly, as she is one of that "eccentric class who will not permit intoxicating liquors of any kind to enter her house, and yet is not opposed to delicious summer-cooling drinks," and that a spoonful of this jelly in a glass of ice water is far more refreshing, she is sure, "than the sherbets, or other fancies of wine inflamed writers."

She adds, "If you do republish it, say to your readers that, for making the jelly in this vicinity (Philadelphia), the Currants ought not to be gathered later than July 10th. Late crops make the poorest article."

We cheerfully reprint the recipe, thanking our friend for her compliment and additional instructive hints. This is the way it is made:

Squeeze the juice out of the currants; strain and measure it. Put it in a copper or brass kettle, and boil it until the scum ceases to rise; then without taking the juice off the fire, stir in one pound of well refined sugar to every pint of juice; and as soon as the sugar is fully dissolved, (which will be in less than a minute,) take it off and pour it into the vessels prepared to receive it. This jelly retains the beautiful crimson color of the currant much better than the old mode.

DESTROYING INSECTS.

We are glad to see that hand-work is getting much more popular in destroying insects of the beetle and caterpillar class, than it once was. All the wholesale and chemical recipes have been weighed, but the insects are not found wanting. They have the advantage, so far, in all these schemes.

We have seen instances where people have spent an hour in arranging matters to drive away or destroy insects, by some charmed process, when a half hour of hand picking would have destroyed the whole crop. The basket, or drop worm, one of the worst enemies to evergreens, is very easily and very speedily destroyed in this way.

Dr. Hull has shown how easily the curculio can be kept down by an application of hand-labor —and yet we find old fashioned and exploded notions of curculio frighteners and scare insects generally floating in great profusion through the newspaper press.

Amongst the best kinds of hand labor against insects, there is nothing better than bird labor. We shall, no doubt, get some odium for this defence of the "fruit thieves," "seed destroyers," and so forth; but we are prepared for it. We have examined the controversy on both sides candidly, and our verdict is for the birds. The result of our reflection on the evidence is put thus:

From March till May or June, when the earliest strawberry or cherry ripens, birds feed on nothing but insects. During this time millions are slain. If it were not for birds we should be overrun with insects. When fruit gets ripe, we believe most insectivorous birds prefer it to animal food—it is to them their after dinner dessert. They are not over conscientious, and are inclined to take much more than their share. In this they must expect to be restrained, even though it cost powder and shot to effect it.

One thing, however, is clear. We can employ a boy to frighten away birds, if we have enough fruit to make it pay to do it; but there is no frightening the insects—and thus the evidence favors the birds.

DUTIES ON TREES AND SEEDS.

The Committee of Ways and Means have reported a new tariff bill, in which occurs the following:

> "Exempt from duty, plants, trees, shrubs, and seeds, imported especially for cultivation, and not for sale or merchandise."

If we understand this right, it is an act of the greatest injustice to American nurserymen, and can result in no way to the benefit of the United States. What the business man imports for his customers he has to pay thirty per cent. duty for, but if the customer orders direct from the European nurserymen it comes duty free. The result of this will of course be to throw the whole trade in trees into the hands of the foreign nurseryman whenever large places are to be planted and the trees are under five feet high. The American nursery business will be reduced to the smallest kind of retailing. A man may not care to send to Europe for a dollar tree because he might save thirty cents, but when he wants one hundred dollars worth or a thousand, three hundred or even thirty dollars gained might be worth looking at. Public parks cemeteries, and the grounds of the wealthy citizen will undoubtedly be benefited by such a law; but what the small buyers, farmers and workingmen—those who have but small yards and gardens—have done that they should bear the whole burden of this tax, or what the American nurseryman has done that his sales should be limited to large trees or small orders, is incomprehensible to us.

The American nurserymen, as a body, were opposed to import duties, but sacrificed their feelings to patriotic duty. The result, however, showed that it was no great injury, but in many respects a gain to their trade. Young evergreens and many other articles, which it was thought not possible to raise in this climate, have been grown from seed cheaply and successfully. In Illinois they are being produced, under the fostering care of these duties, by the million. Another good result has been seen in the influx of good laborers and skilled workmen. Before the war our country was flooded with foreign trees. Since then so many have been raised here that the foreign nurserybusiness has nearly ceased in the United States, and the men who operated abroad, finding no market, have emigrated here, and American nurserymen have no difficulty in getting good men for their work, as compared to the trouble of a few years ago. Thus they are becoming reconciled to the change.

The Pennsylvania Horticultural Society recently refused, by a unanimous vote, to unite with the Tennessee Horticultural Society, in asking for a repeal of the duties on even rare trees or seeds, so satisfied were they of the beneficial working of the present laws. A regular free-trade tariff would be a poor return for such patriotism; but a tariff which takes away all their best trade, which gives free trade to their customers and high duties to themselves, is insult on injury.

Yet, in some respects, the law will work to the advantage of large nurserymen, and crush out the small ones. In the matter of fruit seeds, as one instance. Before the war, many millions of pear stocks were annually imported. One of the effects of the duty was, to find pear stocks could be profitably raised here.

But the seed could not be had. Perry is not as popular here as cider, and so the seed has to be imported from the perry districts of Europe. Under this new regulation, the large grower, the large nurseryman, may import his seed, for his own use, duty free; the one who buys the seed to sell again to the small nurseryman, must pay duty, and the small nurseryman unjustly suffers.

Then see the door which the regulations will open to fraud. As it is now, the honest importer has a hard road to travel under false invoices. Some, whom we know, have had to abandon the business on account their inability to cope with this knavishness.

This, however, is no argument against a legitimate tariff, as the honest man in every phase of business has to struggle with dishonesty; but, smarting under injustice, moral feeling is not usually of the heroic order, and we fear the importations "not for sale or merchandise" will increase to an extent that not even an officer accustomed to the manners of a whisky ring will understand.

BOUQUETS.

Those who have followed us closely through the *Gardener's Monthly*, need not be told that we have little sympathy with that class of horticulturists called the natural school. Gardening of course is an *art*, and though in a certain sense the results of that art should have a natural look, —that is, should not be unnatural,—the art itself should in all cases be avowed and apparent.

Thus in landscape gardening, we see attempts at making things look natural, result in failure. One makes a rockery on his lawn, in front of the parlor window, and disdaining an artificial look, throws the load of stone into a heap, as if waiting to use it for building purposes; scatters a little dirt through it, and feels proud of his "rockery." So in other branches; the natural idea runs wild, until the gardening bears about the same relation to civilization, as a dirty unkempt Indian does to cultivated man.

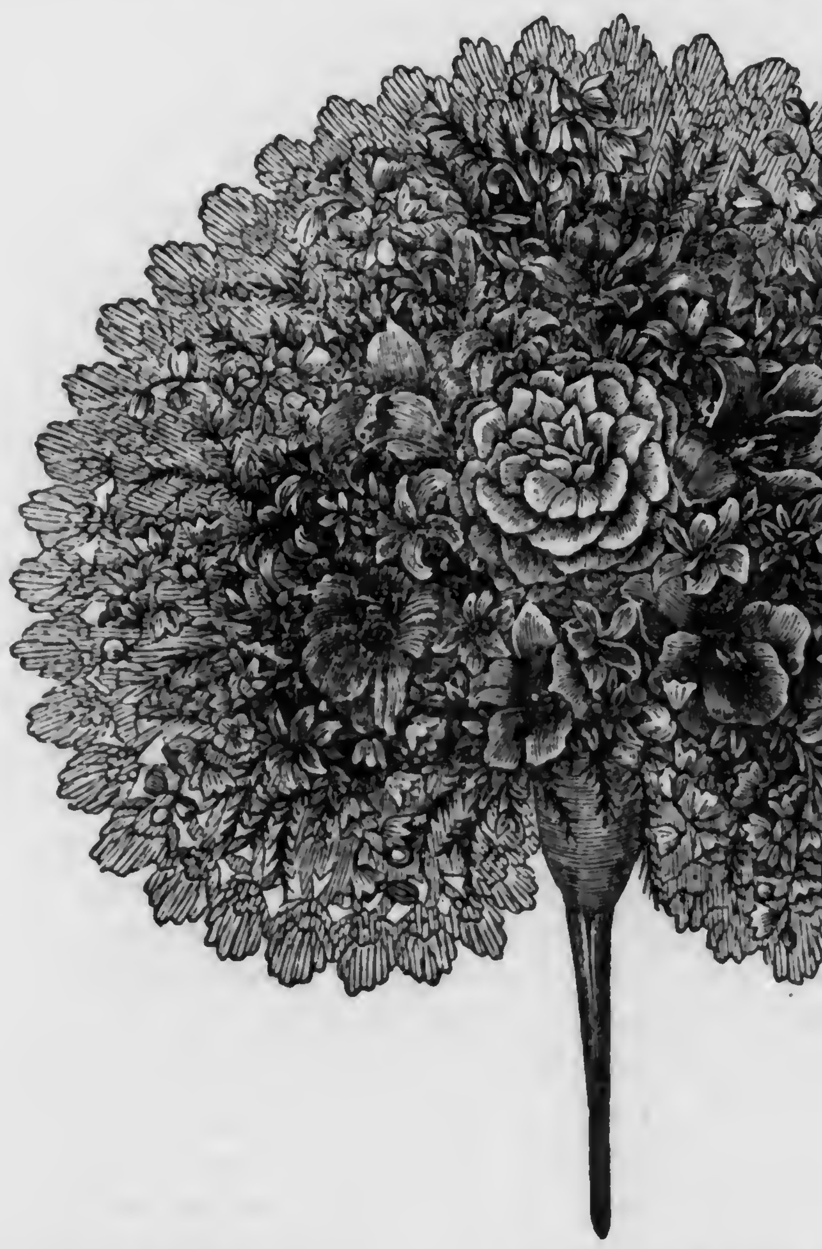
The same mistakes are made in Bouquet making. Because some arrange them in a dense mass, a proper hostility to "bunching," is engendered; but too frequently it creates the opposite error, and we find nothing but a "higly-pigly mess."

True taste does not consist in being either natural or artificial, but in combining together pleasant ideas. A loose arrangement of cut flowers pleases, only because it is *graceful;* and when this looseness is in the extreme, or unsupported by other pleasant associations, it ceases to be graceful and degenerates to weakness. It is the combination of the sturdy, with the graceful,—the rose or the Camellia, with a Stevia or the Lily of the Valley, which makes up the charm of arrangement,—just as in the harmony of colors contrasts or neutrals, are as useful as the rest.

To our mind, a truly artistic bouquet is a sweet thing; not less so than the fragrance of sweet flowers to our coporeal sense; and the more utility one can connect with a bouquet, the better for art.

Now why cannot we reform hand bouquets? A person goes to an opera, a concert, or a party of any kind, and must have a bouquet. A hero rides through on horseback, and he must be smothered with flower bunches. Fashion and courtesy demand their reception and retention—no matter for what purpose the hands are required, the bouquets must be held—they cannot be set down. The round form—so pretty for a table ornament—is a positive nuisance, under such circumstances, as every lady knows, who has had to hold one all the evening in her hand.

When the writer was a boy there was a fashion to have fan bouquets. They could be laid flat, without injury to the flowers, if the hands were wanted for other purposes. But these were ungainly things, no wonder they fell into disrepute; but now that beautiful holders and stiff lace paper backs and borders can be had for them, why not bring up the style again? In our country especially, where the intense heat renders the fan something more than the mere luxury it is to other nations, these fan bouquets deserve especial patronage. The combined bouquet and fan is a charming idea.



It is, as it now is, a great pleasure for many to doze in church; but how much greater the gratification if lulled to sleep by the gentle breezes of a hundred fan bouquets, each wafting the odoriferous breath of Carnations, Violets or Roses? Or at operas, concerts, or assemblages of any kinds, where to sleep is unfashionable and not to be thought of, how much better to drink in, with other sensual delights, an atmosphere fraught with odors thrown off from a thousand moving flowers, such as was never dreamed of even in "Araby, the blest!"

The useful and the beautiful; the artistic and the natural, combined in this pleasant way, can be accomplished by modern art and appliances. Seeing an advertisement of Jacob Haehnlen's bouquet lace holders, in our last number, we walked into his establishment and was delighted with the evidences of progress in this beautiful art. All of the elegant patterns we saw, however, were for round bouquets, but it was easy to see how his genius, which has already given his establishment such a pre-eminence through the United States, could get up something which would accomplish our idea.

We give with this a cut of something like a fan bouquet as we hope to see become popular, and we trust that our friend Haehnlen, or some other designing houses will do their best to introduce them as speedily as possible. Extreme lightness to avoid fatigue in using it, will of course have to be combined with strength; and many other little details will have to be thought of, but these will be easily overcome by yankee genius. When some years ago we suggested in the *Gardener's Monthly* cheap strawberry boxes, we did not ourselves suppose the public would ever have such abundant cause to thank us, as we now see so generally about us, and we have no doubt but the idea of a combined fan and bouquet, will be as easily worked out by our inventive geniuses.

NOTES OF WESTERN TRAVELS.

Horticulture about St. Louis has scarcely yet reached the position of one of the fine arts. So far, it is little more than a branch of Agriculture. Fruits and vegetables, as marketable commodities, command a wide spread interest. The grape especially is a leading power; indeed Horticulture with many here means little more than grapes and peaches. This is the natural course of things. In a new country people must have essentials first, and true art has to bide its time to follow in the wake of wealth and leisure; yet we predict it will not be long before St. Louis takes a prominent place amongst her older sisters in art partronage, and particularly in the gardening art. We found most of her leading men, of great public spirit; and a wide spread wish that a higher order of taste should prevail.

There seemed to us to be no better opening in all the west for a first class landscape gardener. There is already one whom we found much esteemed in his profession, Mr. Kerns, author of a work on Landscape Gardening, and who has charge of the principal public ground,—Lafayette Park. Of Florists Mr. Goebel, has a very interesting collection of flowering plants. Messrs. Colman & Sanders have, we were told a first-class nursery, but too far out of town for us to see. Mr. J. M. Jordan has a rather extensive nursery, and being within half an hour's ride by the street cars, we were able to see what was going on. Mr. J. has a very large nursery, coming on, a short distance from his home ground; he has had it but a short time, but the young stocks looked very well; the young pears particularly, were at least equal to anything we have seen anywhere. On his home grounds, a vineyard of Concord grapes, was a beautiful sight to see. These are trained at an angle of about 45°, the apex leaning north and the trellis formed of wire, and wooden posts. Some of our friends with us did not see any advantage in it, because what the south side gained by this increase of light to the ground, was at the expense of the north side; but we heartly approved of it, from a belief that one surface fully developed is better than two only half formed.

The grapes are trained on the alternate system, that is a young shoot is annually trained up from the bottom, and after fruiting, the old wood is cut away. The grapes were remarkably well colored, large and fine, and as perfect as grapes could be, and the crops could not be excelled. If the system did not help the crop, as some of our friends maintained, certainly it was no detriment to the health or productiveness of the plants.

We wished to go to both Hermann and Alton, as did Mr. Saunders, of the Agricultural Department. We had not time for both, so we divided our teams, he heading for the one and we for the other, denying ourselves the pleasures of each others company, for the public good, and trusting that the good public would appreciate our personal sacrifices in their behalf. We had the company of the excellent Superintendent of the Chicago, Alton and St. Louis R. R., so far as Alton, and may here return our thanks to this gentleman for courtesies extended to us. Everywhere west we received kindness and attention, which enabled us to be far more useful to our readers, than we could otherwise have been, and if our notes prove pleasant and profitable to our readers, they have to thank as much our western friends for kindness and facilities so kindly and so generally afforded us.

Alton is an old fashioned town, reminding us more of some old villages of Europe, than any thing usually seen in the United States. It is about thirty miles above St. Louis, in the State of Illinois. Though so antiquated in appearance, it is filled with as modernized a set of men in the horticultural line, as we have anywhere met with. The soil and climate, to be sure is admirably adapted to horticultural operations, but all these would be of no value, without live men to take advantage of them.

The Horticultural Society here is one of the most useful in the United States. The members meet in one another's houses, and after discussing horticulture, have a good time generally. The leading men of the place take an interest in these matters, and good horticulturists as all of them are, and ardently devoted as we found them to the cause, it was plain to be seen that the ladies were as intelligently interested in the cause as the stronger, but least interesting, half of creation. We were fortunate in finding Mr. Willard E. Flagg at his office, keeping guard over the treasury of good Uncle Samuel, and were soon "put through in good western style." Our first call was on Mr. McPike, whom we found an interested student of the Natural Science of House building. His new mansion is probably the handsomest about the city. On the grounds we found a very interesting collection of rare evergreens, but the great charm was the vineyard. The Delawares, and and indeed all other varieties were worth a hundred mile trip to see,—all kinds seemed to thrive. If the paradise lost by Adam had been famous for its grapes, instead of its apples, most assuredly we should have found the lost garden here, and in the owner the happy Adam himself. We do not mean to compare our friend with the historic manly appearance of our first parent, because we are not given to such personal compliments, though in this instance, we might not be far wrong if we were; but we mean in the intense enjoyment he seemed to derive from his success for its own sake, and in the exhibition of it to his friends. He attributed much of his success to his system of management, but we think much more is due to his personal enthusiasm and love for his horticultural children. A happy combination of circumstances frequently make up for many deficiencies in other matters.

A few miles further out, is the estate of the Messrs. Starr, in which were many acres of grapes. The Concord and Catawba is the main reliance, although all the leading kinds were grown, and grown with satisfaction. We were taken to many orchards in the vicinity, and found with much to encourage, that even in this Eden of fruit culture, some serpent was bound to enter. One particular trouble was the *apple fire blight*, which, akin to the common pear blight, we saw here for the first time. Whole branches suddenly go off, in a short time just as the pear, and precisely the same way, that is by a patch of disease going round a two three or four year old branch, for a few inches in width, girdling the stem, and checking the flow of sap, instantly destroying all above it. We have no doubt, but as in the pear it is caused by a parasitic fungus; but as very large branches are not destroyed, and it seems much more regular in its destructive operations than the pear blight, it is quite likely to be another species. That it was a parasite, having the power to spread from tree to tree, was clear from the way the diseased trees fell in line one after another. Its trace could be as well discerned through the orchard, as a streak of Canada thistles, through a piece of arable land. Our western friends had better keep an eye on this insidious enemy,—cutting away and destroying as soon as it appears, will no doubt be effective.

Another curious disease new to us, we found in the peach. The fruit rots, as we often see in the east, but it does not rest with the fruit,—the branch it is attached to dies away, down to the main stem, from which it sprang. We could form no theory of this very destructive disease; but as we left Alton, we found a valuable microscope from Philadelphia just arrived, for the use of the Horticultural Society, and we shall no doubt hear all about these things soon from the intelligent gentleman who acts as the chief officer of the institution. Dr. Hull's place on the river, near the Piasa Bluffs, was particularly interesting. In no place in the Union have we seen fruit culture in so many varied forms, so successfully, and as a matter of course under such circumstances, intelligently conducted.

It would be well worth any ones while to visit these grounds, before going into fruit culture for themselves; not boring the Doctor however, who seems to be his own chief laborer, and whose time must be therefore, very valuable; which fact led us the more to appreciate the time he bestowed on us. Mr. Flagg's homestead and fruit gardens, was a very interesting spot, for here we found some of the oldest apple trees in the State, some of the most extensive young plantations, and one of the most intelligent and estimable of gentlemen to own them. Mr. F. is an enthusiast in the literature, as well as in the practice of horticulture, and his library is a museum of literary treasures. The young apple trees were just coming into bearing, and the old trees were very successful, which we are glad to make a note of, because Mr. F. we believe is an advocate for a continuous keeping of a loose surface to an orchard through all time, which we are not; and it gives us just as much pleasure to record facts, which may seem to militate against a favorite theory, as if they supported it, as all we wish is the truth. After a very pleasant day spent with Mr. Shaw, at his botanic gardens, to which we shall some time again refer to, our next point was Chicago, at which we stopped a short time; but as we have an invitation from the American Association for the Advancement of Science, to meet them there in August next, and which we shall probably accept, we shall defer our further Western notes until our return.

SCRAPS AND QUERIES.

DUTIES ON TREES, SEEDS, &c.—We have the following note from *Mr. Raoux.* Since our article in another column was written, we have a letter in which occurs the following: "Commissioner Capron denies that he favors such a law, but I understand the clause is inserted at his suggestion."

"The New York *Tribune* of the 6th inst., gives copy of a bill, agreed on in the Committee of Ways and Means, at Washington, the section 8th of which reads as follows:

'And be it further enacted, that from and 'after the passage of this Act, the importation 'of the articles hereinafter mentioned and embraced in this section, shall be exempt from 'duty. That is (many articles are here enumerated,) and then, "plants, trees, shrubs and seeds 'imported especially for cultivation, and not for 'sale as merchandise.'

In 1861, a few Nurserymen petitioned Congress to impose a duty on trees, plants, and seeds, which could then be imported free. (Some of the petitioners have since told me that they regret having done so.) However, Congress granted their request, and imposed 30 per cent. (payable in gold, of course,) on cost of the articles, on cost of packing and packages, on cost of transportation from foreign nurseries to ports of shipment, and on 2½ per cent. on all this besides.

At present, it is intended to maintain that duty on such plants, &c., as are imported for sale, and to let those come in free, which are imported for cultivation especially, and not for sale.

If the law is thus made, the honest dealer in foreign nursery stocks must give up his business, because dishonest dealers, by swearing their goods free through the Custom House, will be able to under sell him.

Neither can any man swear that the stocks and evergreens, which he imports by the million, are especially for cultivation and intended never to be sold again. Nurserymen and dealers being the only importers of trees, plants, shrubs and seeds, thence, no one will be benefited by the intended discrimination, except such persons as can swear falsely, and foreign nurserymen who will look for a trade amongst planters and farmers direct.

May be, I am prejudiced by my own interest in the matter; but, really, I cannot conceive of a single argument in favor of the proposed measure. On the contrary, I anticipate that it will cause great inconvenience. If any of your readers view it in another light, I, and probably others, would be obliged to them for their opinions."

CHERRY SEED.—*G. W. T., La Gro, Wabash Co., Ind.*, asks: "How can I obtain good seedling Cherry stocks speedily? Can I grow them

from the seed of any of our common Cherries so that they will receive, profitly, the bud or graft of the improved kinds? If so, how shall I treat the seed?

[Any common cherries will do for stocks, though those which grow wild are preferred. Mash off the pulp as soon as ripe, and dry in the shade—not in bulk, or they will heat. Keep them this way until ready to sow. Many sow them in fall—but we do not know but to keep them cool and damp through the winter (not in sand) is not as good a way as any,—to sow early in spring.]

NAME OF PLANT.—*A. M., Pittsburg, Pa.*, writes: "I enclose branch and flower of a tree grown from a seed picked out of a sack of coffee. It is a stranger to me. Please name it."

[*Abrus precatorius.*]

ABOUT SPRUCES.—*G. W. D., Kent, Portage Co., Ohio*, sends us some branches, from which all the leaves have fallen, and says: "I enclose twigs of what seems to me to be three distinct varieties of native Spruces.

No. 1 has red buds, foliage much like the Norway Spruce, but uniformly of one color. From northern New York. Is it Abies rubra? Buds start late.

No. 2 is earlier in starting, has cones shaped like the Norway, but quite small, 1½ to 2 inches long, and quite slender. Is it the Black Spruce or Abies nigra?

No. 3 has the small cones upon it; it is more open, foliage of a silvery green color, and its lower branches die out early. Is it the White Spruce or Abies alba?

Are there any other native Spruces within the limits of the United States, and east of the Mississippi River?

[We can make nothing of the mixed mass of leaves and branchlets, and can only say that, the White Spruce (*Abies alba*) have cylindrical cones; while the Black or Red Spruce, which are one and the same thing (*Abies nigra*), have ovate cones. These Spruces vary very much, individually—but Black and Red Spruces can be had from the same package of seeds. We have, besides these, the Hemlock Spruce east of the Mississippi.]

HARDY EVERGREENS AT SPRINGFIELD, MASS.—A correspondent says: "Our list of Evergreens that we can depend on is so limited, that the Norway Spruce makes up "the warp and most of the filling," of our orders to Europe—it being, perhaps, the only evergreen tree without fault. The Balsam Fir—our native—which has so many good qualities when young, I have left out of my new grounds, on account of its shabby old age, which always commences before a boy has seen years enough to be his own master. It will have to be admitted.

The White Pine would be a favorite with me if it did not demand so large a space to perfect its beauties. There are thousands who possess the light sandy soil which they can spare by the acre—a soil, too, it delights to grow in—and for them it is invaluable.

The tree mostly planted throughout the North is the American Arborvitæ, and its merits are well understood. Nursery grown trees of this class may be removed any day in the year when the frost will permit. To test this, at one of the most unfavorable seasons I had nineteen hundred plants set out in the "Evergreen Cemetery," at Portland, Maine, in the month of November. This was about eight years ago, and every plant is alive at the present time.

Your theory in regard to the fatal effects of wind, the Hemlock fully proves to be correct. Its hardihood, where the thermometer falls low is rarely seen to fail. I think you have somewhere spoken of Evergreen trees being interspersed alternately or otherwise, among orchards; and on this point more light is needed.

But my object was more fully to ascertain the effect of the *past winter* on Evergreens, as by this time it must be pretty generally known. Notes of Mr. Sargent in last *Monthly*, are valuable. Can he not afford us another article, giving us a list of all Evergreens that are *as hardy as the Norway Spruce?* 2d. All as hardy as the Irish Juniper.

1st. In the order of their value *for shelter*. 2d. In the order of their *beauty*.

In this latter view, I was so well pleased with some samples of Cupressus Lawsoniana, just imported, that I regret to see it among the "killed and wounded."

PRONGED HOES.—*B. R., Monmouth, Pa.*—These are digging forks bent like hoes. It is another name for hoe fork, which we have used many years, and often recommended under this name in our magazine. We know nothing of any "patent improvements" thereon.

FLORIDA LILY.—Our *Volusia* correspondent sends us the following note which refers to *Amaryllis longifolia:* I send you, by to-day's mail, 3 bulbs of what is commonly called the "Florida River Lily," a very beautiful and highly fragrant flower. My friends up North (Boston and New York) cannot name it for me; I cannot, either. I send these bulbs to you, hoping that you may be able to tell me what it is. Some say it is an Amaryllis; some a Crinum; others a Pancratium.

I will give a brief description of them, and if you pot these bulbs and have them flower, I am sure you can name them.

The bulbs are flowering bulbs—that is, they will flower this season. They will not stand your winter. This plant grows freely and abundantly on the banks of the river St. Johns and its tributaries, and is found only in the low, peaty parts of the bank, where it is immersed in the running water. It bears, in May or June, three beautiful, fragrant white flowers, on the end of a long scape. Petals 6, stamens 6, pistil 1.

There are three different varieties: one with plain petals, one with petals connected at base by a fine, delicate tissue, about the size of a "Marvel of Peru" flower, and one with petals finely imbricated. This last variety blooms in the fall. The whole of these varieties seem to be propagated by a large, fleshy head, of a light green color,—in size and shape like a Horse Chestnut.

I have this plant growing finely in my garden, the soil of which is a coarse sand, very dry. I think it will suit in any soil, but believe a mixture of peat and silver sand would be most acceptable, as that approaches nearer to its natural soil. It will require a large pot or box, as the fibrous roots are quite large and numerous, and spread far in search of nourishment.

INVERTING CUTTINGS.—*J. L. P., Upper Darby, Pa.*—"I notice that Andrew S. Fuller, at the New York American Institute Farmers' Club, held May 26th, 1868, in answer to Horace Greeley, stated that, if cuttings be stuck upside down, the flow of sap would also be reversed. Please give us thy experience in the case, in the *Monthly*, and inform us whether cuttings so reversed can always, or ever, be grown into vigorous plants."

[Mr. Fuller is right: it makes no difference which end of a cutting goes in the ground, the sap will flow from either end. Try it in a tip rooting Raspberry or Blackberry, and you will see it for yourself. Tie up the runner, next year, which bears the root at its apex, and you will find it bear fruit for you as well as any other cane, although, of course, the vessels through which the sap flows are inverted.]

SEEDLING VERBENAS.—*Mr. S. H. Purple* sends some more specimens of his very pretty seedling Verbenas.

AGRICULTURAL COLLEGES.—We are glad to learn, from a correspondent, that the Pennsylvania State Agricultural College gives, at length, some promise of usefulness. It is interesting to note how slow is the growth of all great ideas, and how encouraging it should be to bear up against continual discouragement, in the hope that a true and good principle will ultimately prevail.

Amongst the earliest advocates of this College were Judge Woodward, Gov. Bigler, and the late Dr. W. D. Brinckle. They followed in the wake of Massachusetts.

It must be eighteen years ago since the matter was first brought up in that body by, we believe, Marshall P. Wilder, who may honestly consider himself the father of these State Colleges. Massachusetts is still leading the van in this good work. We see by the papers that $50,000 have recently been appropriated for new College buildings at Amherst, which will enable them to accommodate 100 scholars. It must be very gratifying to Mr. Wilder to see how vigorously his good seed is everwhere vegetating.

WAR IN FRANCE AGAINST COCKCHAFERS.—In the district around Amiens, Department of Somme, in the north of France, war to the death has been proclaimed against the cockchafer (*Melontha vulgaris*), called also May bug or dor-beetle, a premium of 10 francs, a hectolitre (about $1 per bushel) brought to the authorities such a quantity of these troublesome bugs, that they were induced to reduce the premium to 4 francs a hectolitre; and even at this premium expert hunters are able to earn good day wages. These bugs are mixed with lime and thrown into a pit to be used as a manure.

BOOKS, CATALOGUES, &C.

THE BOOK OF EVERGREENS.—A practical treatise on the Coniferæ, or Cone-bearing plants. By Josiah Hoopes, member of the Academy of Natural Sciences of Philadelphia. New York: Orange Judd & Co.

This is the full title of one of the most interesting books of the season. A good work on Coniferæ has long been wanted. Carriere, in France, and Gordon, in England, have tried it and both measurably failed. In commenting on Gordon's work, Dr. Lindley attributed the ill success to the fact, that Gordon was not a scientific man. "None but a botanist should attempt such a task."

But Carriere, writing from the pure scientific standpoint, met no better success. It is so rare to find science and practice united in the same individual, and yet so necessary in a work on Coniferæ, that we were without hope of seeing one.

Mr. Hoopes, however, is just the man for the task—a good botanist, who can appreciate the proper claims of a form to specific characters—an enthusiastic collector of living plants of the tribe; and, with an excellent opportunity of examining and comparing disputed points, no one could have a better chance of distinguishing himself in this line. That he would succeed, no one who knows the man could doubt. That he has succeeded, an examination of the work fully testifies.

It makes an octavo of 431 pages, handsomely illustrated in the usual elegant style characteristic of Orange Judd & Co. It treats of the history of the Pine family—about soil and planting, propagation, pruning and management. Evergreen hedges, diseases, injurious insects, selection of sites, selection of varieties, synopsis of the genera, description of all the known species and varieties.

The last topic, of course, occupies a considerable portion of the work, and is a very important chapter, as it is just here that the want of comprehensive views, in previous authors, has been felt; while it is just the subject, owing to the existing confusion of names, that every one wants to know about, and which makes a work of this kind so necessary to every good Horticultural library.

It is quite possible that the critical reader may not, in all cases, be willing to adopt the nomenclature of the author; he may not, perhaps, be willing to regard *Pinus montana* as nothing but a synonym of *Pinus pumilis*, and yet adopt *Pinus mugho* as, not a variety merely, but a distinct species from *P. montana*. He may doubt whether *Pinus laricio* is any more worthy of being separated from *Pinus Austriaca*, than *Pinus Pallassiana*, and so on through the whole chapter. But we doubt whether any one could, on the whole, make up a better book from existing materials, and we cordially recommend it as one which does much credit to American Horticultual literature, and which will long be of standard authority on the subjects of which it treats.

WOODWARD'S RECORD OF HORTICULTURE, for 1867. Second Vol., Edited by A. S. Fuller.

Has just appeared, why so late in the season does not transpire. It has one of the best lists of Nursery and Seedsmen in it, which have come to hand so far. These annual volumes, showing the improvements of past year, are always interesting, and when carefully compiled are of great value. Amongst the "Peaches of 1867," we were surprised not to find George IV, Old Mixon or some other of these favorites. Van Buren's Golden dwarf, however, (figured and described in the *Gardener's Monthly* for 1859) we are glad to find has not been overlooked.

We may observe that this was "described" in an entirely original way, by the *American Journal of Horticulture* last year. It is customary with "high toned" describers to refer to any previous description, should one have been made by any respectable contemporary. No one expects this species of honesty in the *J. of H.*, but one might have looked for it in the "Record of Horticulture."

NOXIOUS INSECTS OF THE STATE OF ILLINOIS.—By B. D. Walsh, M. A., acting State Entomologist.

This is a very valuable contribution to Entomology, for which we are indebted to the enterprise of the Illinois State Horticultural Society which is sustained by an appropriation from the State Legislature, and which donated $500 of the one year's money to Mr. Walsh, to enable him to prosecute the researches which form the basis of this report.

Transactions of American Pomological Society,--Eleventh Session, at St. Louis, 1867.

This, the united efforts of President Wilder, Secretary Elliot, and reporter Bragdon, is very creditable. It strikes us as remarkably accurate and one of which the officers and the Society generally will be proud.

A few thoughts on the Tide, *and the Circulation of Air and Water, causing a change of form of the Surface of the Earth.*—By A. Purves, member of the Franklin Institute of Philadelphia.

A fifteen page pamphlet, suggestive of many points in natural philosophy, some of which must be true. One makes it probable that earth's axis is in a continual state of change, scarcely appreciable perhaps annually, but great in the aggregate of innumerable years, which on the theory that motion is an unvarying property of matter, cannot be gainsayed.

The American Naturalist.—Published at Salem.

This is now in its second year. Its aim is to popularize science, by clothing it in a more 'every day' dress, than is usual in pure Scientific Journals. It has been so far as well supported as one could expect a pioneer work of this kind to be, but not near as well as we should like to see it. We are quite sure that any lover of rural life sending 25 cents, for a single number, would become afterwards a regular subscriber. It is especially well suited to have in families, where every influence is now required to counteract the desire for the trashy literature which every parent deplores.

Transactions of Indiana State Horticultural Society, for 1867. From Mr. J. S. Dunlop.

By the list of members published, we judge this Society, is very well sustained; and with transactions so ably arranged, and evidently of much value to Indiana Pomologists, they have every encouragement to support the Society.

Delaware the Garden State of the Union.—By Henry S. Williams, Agricultural Editor of the *Independent*.

Will be found a very useful work to any wishing to know the capabilities of the soil of Delaware, and the many circumstances favorable to the fruit and garden operations for which the little State is becoming famous.

Fifth Annual Report of the Proceedings of the West Jersey Fruit Growers Association, 1867—'68.

We are indebted to Mr. W. Parry, for this account of the success of one of our most useful fruit societies.

DOMESTIC INTELLIGENCE.

Disease in Coniferæ.—The following from Mr. Hoopes' New Book is worthy of serious attention. Though differing from the author as to the necessity of previous disease in the case, the facts are not the less worthy of study: "One of the newer diseases prevalent among evergreens, and one from which the "Strobi" group of pines is singularly and entirely exempt, manifests itself as follows: Early in the autumn a few minute spots are noticed at the apex of the leaves, which gradually extend downward to the base, until they almost cover the entire surface. The leaves finally become so diseased as to fall off, thus leaving a long, bare brand, either completely destitute of foliage, or occasionally with a small tuft of reddish-brown leaves at the extremity. We have noticed that, until very recently, trees growing on low, damp grounds, where there was imperfect drainage, were always attacked first. Especially was this the more clearly shown in nursery rows, where we would observe a few trees standing in a spot where, during winter particularly, there was stagnant water about the roots; and whilst these trees would be gradually dying with this mysterious malady, others in the adjoining rows would be perfectly free from its effects. Within the past year, however, this disease has become less fastidious in its selection of situation, and has assumed more of the character of an epidemic,

spreading to trees that were growing in soils exactly the opposite in nature to the above. We have lately observed its appearance on a plant of "Pinus Austriaca" and "P. laricio," standing on a dry, gravelly hillside, where the surface had been washed away by the heavy rains. To these two extremes of unsuitable soils this disease is almost entirely confined, and rarely can it be observed in such pines as are growing in well prepared ground.

After having examined and patiently studied this unhealthy state of the tree, from the first intimation of disease, through its various stages, until death ensues, we are obliged to admit that we cannot make any positive statements in regard to its cause or eradication. In the disease under consideration, small spots are perceived on the leaf of pine, which spread rapidly, they cover the whole surface. Under a good lens these spots are discovered to be a very minute fungoid plant, which finding a suitable condition for its growth, speedily destroys the leaf. As all vegetable productions when in a perfectly healthy state are free from the numerous parasitic growths that are common to diseased plants or trees; therefore, when any appearance of the lower order of Cryptogamia,—such as fungi, mosses, and lichens,—become visible, something must be assuredly wrong in the functions of the plant itself. The parasitic vegetation is not the primary cause of ill health, as some imagine, and and hence the mischief is performed before these outward forms become apparent; and although these are charged with being the prime instigators, they are in reality but the effect of disease previously contracted by the tree. The species that we have found to be most easily affected are the "Pinus Austriaca," "P. laricio," "P. pyrenacia and P. Pallasiana," with perhaps a few others, and in every case the diseased trees were members of the two-leaved group of pines.

Peaches and Plums.—*To Remove the Skin from Peaches—An Excellent and Expeditious Method.*—Make a lye as strong as possible of wood ashes and soft water. Fill a kettle with lye, and, when boiling rapidly, drop in twelve or eighteen peaches, and take out again almost immediately, and immerse them in a pail of cold water. Take one in your hand and you will perceive that the rind will slip off entirely, leaving a round, beautiful yellow ball; throw it immediately into another pail of pure water, and and so proceed until all are done. This process will not injure the flavor of the finest peach, and once tried, the old fashioned method of peeling with a knife will not again be adopted. If the lye is not strong enough, put into the kettle two dipperfuls of clean wood ashes. This is an excellent way to rid small onions of their jackets preparatory to pickling them. Try it.

Peaches to Bottle.—After seeing that your bottles or cans, with their proper lids, are ready, season your bottles, by pouring into each one a pint of water in which you can bear to hold your hand any length of time, but which should be quite warm. Place upon the fire a nice clean porcelain or brass kettle, in which is about a pint of water; sweeten it and place in the peaches which are prepared. We always have ours. As soon as boiling, empty a bottle of warm water and fill with peaches, pushing the topmost well under the juice, and put on the lid immediately; put more peaches into the kettle, and more sugar and water as required. We always keep a kettle of boiling water ready at the back of the fire.

To Pickle Peaches.—Wipe them well, and stick into each one, three or four cloves, and place in a crock, and prepare a pickle as follows: To one peck of peaches allow three lbs. of sugar, and nearly one quart of vinegar. Scald and pour over three successive mornings.

Plums to Pickle.—After weighing, place the plums in a jar or crock, a layer at a time; between each layer scattering a few cloves, stick cinnamon, and allspice. Then to three lbs. of fruit allow one lb. of sugar, and vinegar enough to moisten nicely; boil and pour over; set the jar in a kettle of warm water, and let the water boil till the plums are soft, or drain them and pour over again till the juice will cover the plums.—*Country Gentleman.*

Curculio.—The following is from the *Circular*, and is the plan pursued by the Oneida Community: "We take two long, double width sheets and fasten small bars of wood at the ends of each. At half past four o'clock in the morning the sheets are manned by four hands (one taking hold of each end of the sheets) who pass under a tree, holding a sheet on each side, thus covering all the surface under the branches of the tree. A fifth man, armed with a six-foot battering ram well padded at the end, then gives the trees several sudden jars, which causes a shower of defective fruit, bugs, worms, and flies of various sorts, together with our game—the curculio—to fall upon the sheets. The operation is performed thus early in the day, because while it is cool the curculio is in a semi-torpid state, and a slight jar loosens his hold on the tree and tumbles him below while to stupid too fly.

Lancaster County (Pa.) Horticultural Society.—At a recent meeting Professor S. S. Rathvon read the following: "On the 30th of May, the present season, I found upon my rose-bushes in my garden, in goodly numbers, but with bad intent, the parent of what is pretty well known among florists and amateurs as the "Rose-Slug," and I exhibit them on this occasion, in order that those interested may avail themselves of the benefits that such knowledge affords. There are different species of these insects, but the principal ones, are those that attack the leaves of the rose, the cherry and the pear. They belong to a family of Hymenopterous insects commonly called Saw-flies, and are the Tenthredinidæ of entomologists. The species here exhibited is the *Selandriæ rosæ*, and I have no doubt that those who have cherry and pear trees, may now also find the *S. cerasi* and perhaps a *S. pyri*, although it is thought that there is but one species, that indiscriminately attack both the cherry and the pear. The rose Selandriæ or Saw-fly, is a small shining or jet black insect, about a quarter of an inch in length, and has four dusky tranparent wings, that lap longitudinally on the back, with a heavy black opaque anterior or costal margin. Its larva is a repulsive snail-like slug that lays flat on the upper surface of the leaves, eating them away, disfiguring and marring the health and beauty of the bush. These larva mature and go into the ground, to undergo their transformation in July. There are two broods, the last one remaining under the ground until the following spring. These Saw-flies can be easily captured by the hand, if the rose-bushes are visited early in the morning, or during cool cloudy days. They then will be found on the bushes or contiguous plants, and should be immediately destroyed. During a warm sunny day, they are too active to capture easily. They are somewhat later than usual the present season, and I have no doubt that if immediately attended to, much vexation and lamentation, over despoiled rose-bushes, may be avoided. If prevention has been neglected, or is ineffectual, then when the, slug makes its appearance, alkalinous solutions or tobacco decoctions, will have to be resorted to, but they may also be destroyed by crushing them between the thumb and finger, doubling the leaf together, although this operation is not very agreeable to nervous sensibilities.

Prices of Nursery Stock at the West.—Trees and shrubs seem to be reaching higher prices at the west than heretofore. A writer in *Prairie Farmer* describing the grounds of the Illinois industrial university, thus writes:

"A row of silver maples reaches entirely around the grounds, as street trees. They are 20 feet high and are put in at $1.00 each.

I notice Larches, Arbor Vitæs, &c., at $5.00 each; 500 Norway Spruce at $2.00 each, also, rose bushes, Spireas, Lilacs, Honeysuckles, Wistarias, &c., &c., for all of which it is proposed to charge $2.00 each."

The Iowa Agricultural College has established a grade of non-resident Professorship, appointing the following gentlemen to the offices:

Professor of Geology and Natural History.—Professor Agassiz, of Cambridge, Mass.

Sheep, Husbandry, &c.—Hon. J. B. Grinnel, of Grinnell, Iowa.

Fruit Culture.—Professor J. J. Thomas, Editor of the Horticultural Department of the *Country Gent'eman*, and author of the "American Fruit Culturist."

Professor of Horticulture and Landscape Gardening.—Dr. John A. Warder, (President of the State Pomological Society of Ohio) Cincinnati, Ohio.

Professor of Veterinary, Medicine and Surgery.—Dr. Dadd, Chicago, Illinois.

Professor of Agricultural Chemistry.—Professor Johnson, of Yale College.

Preserving Grapes.—In answer to a correspondent The London *Cottage Gardener*, says: Dipping them in lime water must be very objectionable, for it would not adhere to them unless the bloom were first rubbed off, and then a great beauty is taken from them. If the lime did adhere, we do not think it would preserve the grapes longer than they can be preserved without it. They may be kept for months if hung, stalk end downwards, in a cold, dry, dark closet.

FOREIGN INTELLIGENCE.

A Curious Feast.—A singular feast, being in fact, a feast of radishes, oaten cake and butter, with strong ale, was given one night recently (says an English paper) at Levens Hall, Westmoreland, the seat of the Hon. Mary Howard. This is quite a customary affair. In the olden time it was the duty of the Kendal corporation to open the Minthorpe fair by reading the ring's charter, and for this purpose that body used to proceed to the old post town in state, the mayor and his municipal colleagues in cocked hat, and robes, bearing the silver mace and other insignia of office.

Having opened the fair, the corporation then accepted an invitation to Levens, and proceeding thither they were received by the master of the hall, and by him entertained at a feast composed of the primitive viands above described. Afterwards the guests walked around the grounds, and thence returned to Kendal. Of course this was merely a complimentary recognition of the Kendal dignitaries, and as such it has been regarded ever since. Now, however, the feast has become more general; for in addition to the existing corporation as many of the male portion of the public as like to be present are admitted, and ample provision made accordingly.

About one hundred and fifty persons, some of them the leading gentleman of the county, were present. Two large tables were laid out in the garden, and upon these were pyramids of oaten cake and patties of butter, together with a whole crop of radishes and sundry cans of strong ale. There was the greatest liberality manifested, and the guests ate and drank with evident zest. One important feature of the feast is the compulsory form entitled "drinking the constable." This is an ordeal through which all strangers are required to pass, and for that reason is not generally admired by the neophytes themselves, though greatly appreciated by the older visitors.

There is a forfeit too. A large glass, of unique form, like a tankard on a pedestal, is filled with some dark-brown liquor called "morocco," being strong ale made from burnt malt, and this is given to the 'colt,' who is required to stand upon one leg and drink the toast, "Luck to Levens as long as the Kent flows." If he fails to swallow the draught before putting down his foot, the man forfeits a shilling. Of course much fun is made of this feature, and the contortions and evident desire of "colts" to keep their legs is provocative of immense laughter: indeed, in it is composed the whole fun of the proceedings. After the feast there were various athletic sports peculiar to the north, the whole coming to a conclusion at sundown.

Variations in Datura.—In 1861 M. Godron found, in a crop of *Datura tatula*, a species with spiny fruit, a single individual, in which the capsule was perfectly smooth, and unarmed. Seeds taken from this capsule gave, in 1862 a batch of plants, all of which reproduced the peculiarities of the individual from which they sprang. From their seed grew a third generation, similarly smooth, and in 1865 and 1866 I saw at the Museum the fourth and fifth generation of this new race, in all more than 100 individuals, not one of which manifested the least tendency to reproduce the spinous character of the species. Crossed with this last by M. Godron himself, the unarmed race produced mule plants, which in the succeeding generation returned to the spiny form, and the unarmed form being in fact, genuine hybrids, endowed with fertility. M. Godron from these facts, refers to one species, the *Datura Stramonium*, *D. lævis* (of Bertoloni, not of Linnæus,) and *D. tatula*, three consant forms previously regarded as good species, and adding to it *D. tatula inermis.* discovered by himself, and, so to speak, born under his eyes. These four distinct forms have arisen by variation from a single type, not one of them wanting in any character assignable to true species.

How circumstances control the existence of Species.—Dr. Hooker, says in *Gardener's Chronicle:* The botany of St. Helena is thus most interesting; it resembles none other in the peculiarity of its indigenous vegetation, in the great variety of the plants of other countries, or in the number of species that have actually disappeared within the memory of living men. In 1839 and 1843 I in vain searched for forest trees and shrubs that flourished in tens of thousands not a century before my visit, and still existed as individuals 20 years befere that date. Of these I saw in some cases no vestige, in others only blasted and lifeless trunks cresting the cliffs in inaccessible places.

Probably 100 St. Helena plants have thus disappeared from the Systema Naturæ since the first introduction of goats on the island. Every one of these was a link in the chain of created beings, which contained within itself evidence of the affinities of other species, both living and extinct, but which evidence is now irrecoverably lost. If such be the fate of organisms that lived in our day, what folly it must be to found theories on the assumed perfection of a geological record which has witnessed revolutions in the vegetation of the globe, to which that of the Flora of St. Helena is as nothing.

New Roses.—A correspondent of the London *Journal of Horticulture* has been selecting, he says : Of the Roses which I have selected, Bouton d'Or is a charming little yellow rose, very bright, and will be quite a jewel for Mr. Standish, in purveying for the button-holes of the young dandies of the West End ; it is so neat, so bright and so charming in every way. Madame Margottin is a lovely Tea rose, dark yellow in color, with a beautiful peach colored centre ; very full and beautiful. Antoine Ducher is a large purplish rose flower, a seedling from Madame Domage, fine shape, large petals and an acquisition. Horace Vernet is one of the bright roses, of robust habit, of a good color, but at present inclined with me to be a little rough. Mdlle. Annie Wood, I have seen but two blooms of, but they were beautiful, the shape exquisite, the color fresh and lively, somewhat, if I recollect rightly, in the style of Olivier Delhomme, but likely to prove a good rose. So far for 1866.

Grafting.—Dr. Regel describes a new method of grafting as practiced by Herr Freundich, one of the Russian court gardeners, with remarkable success. Instead of taking the scions from the previous year's wood, with the bud just begining to swell, the still soft growing lateral shoots are selected when from one-half to one and a half inch long, and either bark or tongue grafted, care being taken not to draw the ligature too tight, as they swell much more rapidly than hardwood scions. Success, he says, is certain, if care be taken that the sap of the stock be in motion at the time of operation is performed. He recommends this mode as superior to all others, especially for hard-wooded trees, such as Quercus, Fagus, &c., which are usually difficult to propagate from the old wood. New roses and other plants, which is desirable to increase as rapidly as possible, may also be advantageously worked in the same manner.—*Florist and Pomologist.*

Wintering Caladiums.—Perhaps the great-difficulty experienced by those who grow Caladiums is in keeping of the rhizomes in a fresh state during winter. Their proneness to decay is now generally acknowledged, and considerable difference of opinion prevails amongst practical men on this important point. One maintains that the soil in the pots should be kept moist, another maintains that it ought to be kept dust dry, while a third party thinks a lower temperature than that kept up in the stove will prove beneficial, by insuring a more perfect state of rest, as assuredly it will, and that more lasting than desirable. In my opinion more Caladiums are lost during winter from being imperfectly ripened in autumn than from all other causes, excluding, of course, a low temperature.

The gradual withdrawal of water when the earliest leaves attain a yellowish tint will help greatly to hasten the ripening process ; keep the plants in the warmest part of the house, so as to compensate for declining solar heat, and finally, when the leaves have all withered, place the pots on their sides on the floor of the house. The moisture supplied by the floor and the atmosphere will be enough to satisfy all demands till the middle of February or beginning o March.—London *Journal of Horticulture.*

Pear Diseases in England.—In the *Gardeners' Chronicle* we find that, as with us, Pear growers have their troubles. A correspondent thus speaks of Williams' Bon Chretien, (our Bartlett,) and it will be seen that the fungus, which produces the cracks in the fruit, also exists there :

"As for Williams' Bon Chretien ever being a most exquisite Pear, I must dare to suggest that "Observer's " palate is gratified with a coarse aroma, if he finds it even tolerable. The texture is often decent, though with grit towards the centre, and the juice is pretty copious (if you gather the fruit unripe), yet it is a penalty to eat more than a little slice. The pear has " yellow " taste — I cannot express my meaning more clearly. *Degustibus, &c.* As for the Pears with the little black spots, and

their blemished excellence, I will not presume to deny but what Nature may compensate for the Mushrooms they have produced her. With us the spots great become cracks, and the Pear itself a split billet. The " fungoid spots," beyond all doubt, do influence the flavor, and, at least in this soil, make it as bad as can be.

Curious Experiments in Grafting.—In the whole history of genuine, *bona fide*, grafting, we doubt if there is a more curious instance recorded than that published by M. B. Verlot, in a last number of the *Revue Horticole*, from which it appears that the following curious experiment was made by M. Carillet, of Vincennes, in the month of April, 1866.

Two Pear trees, about 4 years old, both worked on the Quince, of a pyramidal form, and each from 4 to 5 feet high, were chosen. The one, a Beurre d'Aremberg, was made to serve as the stock ; the other, a Beurre de Charneu, was dug up with the greatest care in order to avoid injury to the roots. It was then grafted by approach on the Beurre d'Aremberg, but in such a way that the roots were allowed to be in the air, and the extremity of the leader directed towards the soil. The graft was made at about 30 centimetres (10—11 inches) from the top of each stem, so that when the operation was completed there were two Pear trees united by their leaders, but the upper one was reversed in position, with its roots completely exposed to the atmosphere.

At first the graft grew but little—it only developed a few leaves of small size, and it did not flourish, but, during the course of the summer, the body and main divisions of the root threw out several buds of the Quince, which attained a length of from eight to ten centimetres (3—4 inches.)

The stock, on the other hand, grew with tolerable vigor—even produced flowers, but did not ripen its fruit. The leaves fell in autumn at their usual time. The roots of the graft were entirely unprotected against the inclemency of the winter of 1866-7. Thus the graft has not only grown and produced leaves, but its roots, although exposed to the drying influences of the air, have not only retained their vitality, but they have even pushed forth shoots.

This year, 1867, the stock has grown vigorously, flowered abundantly, but has produced no fruit. The graft developed its buds, flowered, and set two fruits, which now (August 19th) are perfect in size and shape, and bid fair to be equal to those of other trees at their usual period of ripening in October. Furthermore, the branches of the Quince, which are developed on the roots, have grown to a length of from 20 to 30 centimetres.

It should be remarked, that the branches, whether produced from the root or from the stem, after having sprouted horizontally, have speedily assumed a vertical direction. M. Carillet has added to the strangeness of the fact that we have just mentioned, by grafting on the extremities of the four principal branches of the root of the Quince different varieties of Pear. Of these four grafts two have taken perfectly, and have pushed out shoots 4 to 5 centimetres long, terminated by a rosette of well formed leaves.

At present, therefore, the plant is made up as follows : Its base consists of a Quince stock, whose roots are in the soil. On this stock is a Beurre d'Aremberg pear : grafted on this latter and in a reversed position is a Beurre de Charneu, itself terminated by a stock and roots of the Quince, on which, again, have been inserted two new varieties of Pears.

Such is the account given by M. Verlot of this curiosity of grafting, and it is very significant in many ways. It shows, for instance, that the currents of the sap, whatever be their natural course, are quite independent of the mere direction of the tissues ; the ascending sap, for instance, must have passed as well through the inverted stem of the Beurre de Charneu, and its attached Quince stock, as through the erect-growing Beurre d'Aremberg. Again, it shows how the roots of the inverted graft, although exposed to the air, yet managed to throw out buds,—assumed, in fact, (as roots so often do under similar circumstances,) the functions of branches.

It is interesting also, especially in these days when the question of graft hybrids is exciting attention, to see how each portion of this composite structure retains its own individuality. There seems, in this case, to be simply adhesion of one part to another, without perceptible intermixture of characteristics, though the sap, in its course from the soil to the topmost grafts, passes through no less than 6 different organisms—first, through the Quince, then through the Beurre d'Aremberg ; from that, thirdly, into the inverted Beurre de Charneu : in its fourth stage it re-enters the Quince ; and, lastly, it passes into *two* Pear grafts.—*Gard. Chron.*

PRIMEVAL VEGETABLE LIFE.—By the method of placing facts together is now being carried on, by those who are endeavoring to revive the flora which existed at a time when England, for instance, was peopled with kangaroos, an interesting investigation. A leaf, or the mere impression of one, found either in a lump of coal, or on a fragment of some hardened sediment, will at once tell the botanist to what genus of plants it is to be referred ; and, as observation discovers new facts, the species themselves, generally different from those of our days, are gradually distinguished and classified.

It is thus we have, at length, reached a point from which we may pretty nearly guess what a primeval landscape looked like. Instead of the endless variety of forms, which lends such beauty to our plants and stately forest trees, we may picture to ourselves a uniform and gloomy prospect of dreary land, here and there interspersed with clusters of reeds, lepidodendrons, arborescent ferns, and similar straight and formal growths : but no soft grass, no daisies, or other wild flowers. Generally speaking, foggy, heavy weather must have been the rule, and rains exceedingly frequent.

This was during the Permian period ; the Jurassic one was characterized by the prevalence of cycadæ, a family of plants much resembling the palm, and peculiarly remarkable for their very slow growth. They are now chiefly to be found under the tropics.

Our present vegetation seems to have made its first appearance during the subsequent or cretaceous period. The development of the animal kingdom is evidently subordinate to that of the vegetable one—for beasts of prey could not live without herbivora, and these could not make their appearance until there was grass for them.—*Revue des Deux Mondes.*

INARCHING HOTHOUSE GRAPES.—The safest time to do it, is when they have commenced growth, so that the danger of bleeding will be less. It may be done as soon as they have leaves. A smooth part of the stem of the stock and as near the bottom of the rafter as possible, ought to be chosen, and a thin slice of wood, about 1½ inches long, removed. You need not take it off deeper than the breadth of the shoot or cane of the vine to be inarched upon it, from which a similar slice of wood should be taken with a sharp knife, and below the uppermost shoot.

If the parts of both fit exactly, both the edges touching each other, all well ; but if not, you must make their barks both meet on one side, and lie closely together. You must then make in the stock, a slanting cut downwards, and another slanting cut upwards in the vine to be inarched, about half through the latter, and three quarters of an inch in length, and introduce this into the slanting cut in the stock ; both the cuts being of an equal length, the bark corresponding on one if not on both sides of the cut in the stock.

Bind the stock then together neatly with a strip of bast matting ; cover with a little clay or grafting wax, so as to exclude air, and over this place a thin bandage of moss, tied on with matting. You will prepare the Black Hamburgh for inarching by pruning it now to the required length, leaving two good eyes above where you intend inarching. The Black Hamburgh should be treated, in every respect, as if it were for growth, being well watered, &c. In six weeks after the operation the ligature and grafting clay or wax may be removed, and you will, doubtless, have attained the desired object.

The union should be slightly bandaged, and when the Black Hamburgh grows freely, you may cut the cane immediately below the junction, or tie a piece of string very tightly around the cane of the Black Hamburgh, just below the union, and let it grow a month or six weeks longer, then cut it away. The best of the shoots on the Black Hamburgh, if more than one be left above the point of inarching, should be trained up the rafter and have every encouragement ; the others, if any, being cut away.

If you can find a young shoot on the stem well disposed for the operation, you may work upon it ; otherwise, the Black Hamburgh will take on the central rod of the Royal Muscadine. You may allow the Royal Muscadine to carry a full crop ; and when gathered, cut the vine away to the union of the Black Hamburgh with it. The Hamburgh will bear grapes in the following year, so that you will not lose a single year. What influence the stock may have upon the Hamburgh, we cannot tell.

Never train or support a plant unnaturally. Climbers will not do hanging about. Trailer will not do climbing. Grow it as it would grow naturally, and supply only what, in such case, nature does not.

HORTICULTURAL NOTICES.

NORTHERN ILLINOIS HORTICULTURAL SOCIETY.

This Society held its first annual meeting in the city of Freeport.

The greater portion of the first day was occupied by discussions on the Apple. Mr. E. H. Skinner, of Marengo, a leading and most successful apple grower in Northern Illinois, read an essay on the Apple. A committee of five was appointed to prepare a list of Apples to be recommended by the Society for cultivation in Northern Illinois. The following list was recommended :

Summer.—Early Harvest*, Red Astrachan †, Sops of Wine†, Red June†, Sweet June†, Duchess of Oldenburg†, Benoni†, Golden Sweet*, Early Pennock†, American Summer Pearmain†.

Fall.—Keswick Codling†, Dyer*, Lowell†, Autumn Strawberry*, Richards' Graft*, Haskell's Sweet*, Fall Orange†, Fall Wine*, Snow*.

Winter.—Fulton†, Westfield-seek-no-further†, Tallman's Sweet*, Yellow Bellflower†, Jonathan†, Northern Spy†, Wagener†, Roman Stem†, English Golden Russet†, Minkler†, Domine†, Wine Sap†, Rawles' Janet†, Willow Twig†, Ben Davis†, Perry Russet*.

* recommended for amateur cultivation ; † for market and amateurs.

Dr. C. C. Miller read an essay on the Strawberry. He recommends the latest varieties as most profitable for Northern market culture. The Green Prolific was spoken of very highly, because of its productiveness, quality, and for carrying to market. Regarded by some as quite equal to the Wilson in most, or all, respects. A new Iowa seedling, called the Kramer seedling, was spoken of, which is regarded highly.

Mr. J. W. Cochrane, of Cook County, read an essay on the Raspberry. He names the Doolittle Improved, Purple Cane, Miami Black Cap, and Catawissa, as those that can be relied on here at the North. With him, in field culture, their yield is not far from sixty-five bushels per acre.

In the evening an interesting lecture on Entomology, which was very heartily applauded, was delivered by Dr. Shimer of Mt. Carroll.

Second Day.

The Blackberry was discussed. On account of hardiness, the wild Blackberry was considered by many as the most profitable. The Lawton and Kittatinny not standing our cold winters.

An essay on the Cherry was read by Mr. Jas. F. Lester, of McHenry Co. He states that the Early May is the only variety that has succeeded with him. The English Morello was recommended for cooking and canning purposes.

A committee of four was appointed to recommend a list of Pears for family and market cultivation. The following list was presented and approved by the Society :

Summer.— Bartlett, Doyenne d'Ete, Tyson, Rostiezer.

Winter.—Winter Nelis, Lawrence.

Fall.—Flemish Beauty, Duchess, Belle Lucrative, Howell, Louise Bonne de Jersey, Seckel, Beurre d'Anjou.

THIRD DAY.

The Committee on Currants reported in the forenoon, recommending the following varieties for general cultivation in this latitude : Red Dutch, White Dutch and Victoria, and the White Grape and Cherry to a great extent.

The Committee on Strawberries recommended for a distant market, the Wilson's Albany ; near market, the Green Prolific and Russell's Prolific. For autumn culture, French's Seedling, McAvoy's Superior, Downer's Prolific, and Lennig's White.

The Committee on Grapes recommended the Concord, Hartford Prolific, Clinton, Clinton Improved, and Connecticut Valley varieties.

The last day closed with an address, in the evening, by Edgar Sanders, of Chicago, on Floriculture, which was listened to with much interest.

After Mr. Sanders' address, D. Wilmot Scott, Corresponding Secretary of the Society, gave an explanation of a window propagating tank, heated by a kerosene lamp. The chimney of the lamp is made of tin, double, and so as to hold water—in other words, acts as the boiler. The water in the tank is connected with that in the chimney or boiler by means of pipes,—one entering the chimney or boiler at the top, and the other at the bottom, according to the well-known principle in heating common to all boilers for propagating houses. The advantages of using a kerosene lamp are, the heat is constant, steady, and can be regulated in degree by turning the wick up or down.

This method of heating enables ladies to have small window tanks, and to propagate Roses, Flowers, &c., from cuttings, or can be used in starting seeds.

J. W. G.

PENNSYLVANIA HORTICULTURAL SOCIETY.

The annual Rose and Strawberry Exhibition was held at the Horticultural Hall the 16th and 17th of June. The exhibitors were not quite as numerous as on former occasions, but what articles were presented were of great excellence. The following notes we made of the fruit and vegetable departments :

In Strawberries, particularly, the quality of the fruit was remarkable for unusual superiority. The premium for the best twelve varieties was awarded to John S. Collins, of Moorestown, N. J. We noticed amongst them, Starr's Seedling, very much resembling, in form and flavor, Austin's ; New Jersey Scarlet, Albany ; Stinger, a large, showy berry, resembling Hovey in some respects, but larger and lighter in color ; Rippawam—these were darker than we have seen them before, and in many ways resembled Triomphe de Gand, (not, however, equal to it in flavor ;) Cutter, which was beginning to ferment and mould ; Downer's Prolific, still one of the best on exhibition ; Naomi, rather better in quality than we found them last year, and though not so large a berry as some others, we found them growing in public favor ; Green Prolific, said to bear longer in succession, but as sour as Albany Seedling.

The best six were awarded to D. W. Herstine, an amateur, who has already distinguished himself as an authority in the matter of Strawberry culture. In his lot we noticed Fillmore, of very good flavor ; Triomphe de Gand ; Jucunda—these berrries were nearer like Triomphe deGand than any we had ever seen before, but the flavor was not equal to it. Mr. H. informed us that he was disappointed with it on its first fruiting, but day by day it increased in productiveness and value, that he now regarded it as one of the best. It must have more care, however, than the coarse American growers.

The second best six Mr. Chas. Lippincott took. They were Lady Finger, New Jersey Scarlet, Green Prolific, American Agriculturist, Byberry Seedling (very much resembling Rippawam), Jucunda, Agriculturist and Brooklyn Scarlet. It is worthy of remark, that this was the *best* in flavor of all the varieties exhibited. It is said to be a poor bearer, but some bad character is very liable to fall on many new kinds at first. We should not be surprised to find some enterprising advertiser take it up some time as the *best of all.*

The best three the committee awarded to Mr. Charles Harmar. They were the Finger, Hovey, and French. Second best three to Oscar F. Felton, for Agriculturist, Peabody and Lady Finger. The best two kinds to J. J. Pitman, for Agriculturist and Jucunda. For single display of specified kinds, Oscar F. Felton had the premium. He had a collection of seedling Strawberries, but we noticed none amongst them inferior to existing kinds. The best quart of French went to Lorin Blodgett ; best Lady Fingers, Charles Lippincott ; best Triomphe de Gand, D. W. Herstine ; best Jucunda, J. McDonald, gardener to M. Baird, Esq. ; best Stinger Seedlings, Charles Harmar ; best Philadelphia to J. McDonald. Nathan Leeds and William Parry also had collections, which were favorably noticed by the committee.

Of grapes, hothouse grapes were not numerous. The first premium, Black Hamburghs, was awarded to Mr. Wm. Young, gardener to Stephen Morris, Esq., and were excellent fruit. No more beautifully colored ever appeared on the Society's plates.

Best Bowood Muscats were awarded to the same. Three fruiting vines, in pots, to George Huster, gardener to Colonel Alexander Cummings ; and special premiums to J. McDonald for Hamburg grapes ; to D. McCallum, gardener to O. Lewis, Esq., for very good Buckland Sweetwater Grapes ; to W. J. Young, gardener to Stephen Morris, for excellent Pine Apples.

The hothouse Nectarines and Peaches were not as fine as they have been exhibited before. The first premium for Nectarines were the Elruge, to Mr. Young ; twelve Peaches, best Cooledge's Favorite, to the same. These, though not large, were of admirable quality. The Vegetable Committe had almost a sinecure. There was, however, interest on the pea question, through several kinds being rivals for the palm of earliness. Mr. Lewis' Little Gem, Caractacus, and Carter's First Crop were tested by Mr. Dreer and exhibited—all sown on the same day—but none of them earlier than the common Extra Early of the stores. In eating qualities, Little Gem proved the best of the three.

The premiums for Vegetables were awarded to Gebhard Huster, gardener to J. B. Heyl, and J. McDonald, Jr., gardener to M. Baird.

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HINTS FOR AUGUST.

FLOWER GARDEN AND PLEASURE GROUND.

It has been for many ages customary with many minds to associate excessive heat with the eternal sum of all evils ; and to judge by the chosen few who fly from the wrath to come, in every closely built city, from the sweltering heats of August to the cool sea side breezes, or to shady retreats in country places ; there is no doubt this terrible city heat is a great trial, and may fairly be considered as one of the great recruiting agents in the constantly increasing army of lovers of country life.

But this heat which gives so powerful an impulse to country preferences, should teach the professional Horticulturist also its lesson ; and that is, in laying out and designing country places, one of the chief studies should be how to make a place agreeable even in the hottest weather.

Not near enough attention is given to this matter even by many experienced men. Large plats of hard dry gravel, shadeless walks, and struggling flower beds, make up the gardening of by far too many places, the continued effort to keep which in order without much compensating advantage, makes many soon tire of what is thus miscalled "Pleasure" Gardening.

Gardeners often express wonder that so and so with "plenty of money" takes no interest in keeping his grounds nice. Only a deep seated love of country life, battling against discouragements, can keep so many in the good path that we find in it ; and this, not because there is no enjoyment in country life ; but because few study out properly the means to effect the good ends. We imitate too much the European styles of Gardening, forgetting that our peculiar circumstances require peculiar treatment.

In all suggestions for the improvement of grounds, the subsequent cost of keeping in order should be studied well. This is the rock wheron so many strike. Walks and roads are particularly expensive to maintain, and should never be made without there is an evident necessity for them. Shady grass walks, with masses of flowering shrubs on each side, and kept mown a few times a year, are as pleasurable parts of a pleasure ground as can well be provided, yet we very seldom see them employed.

Rustic arbors, as they are usually made, are very mean things for summer comfort. They are too close and hot. They suit European climates better. They should be open all round.

The best arbors however are made by the weeping ash, grafted high, and spread out well, but not allowed to have their branches hang too low down. A circulation of air all round is essential to the comfort of an arbor.

So many fall in love with the country and about this time make up their minds to permanently reside, that these general suggestions may have some value. We will now give some more particular directions for garden work, which may help those who have already commenced.

In preparing the grounds, it should be remembered that grass and trees are not only required to grow therein, but that they must *grow well.* The top soil of the lot is often covered by the soil from the excavations, trusting to heavy manuring to promote fertility. But this is a too slow and expensive process. The top surface soil should, in all cases, be saved, and replaced over the baser soil. Also, where it is necessary to lower a piece of ground, the top soil should be saved to place over again. The depth of the soil is an important matter, both for the trees and the lawn. It should be at least eighteen inches deep. In shallow soils grass will burn out under a few days of hot sun. In a soil eighteen inches deep a lawn well be green in the driest weather. For the sake of the trees, also. the ground should be not only deep, but rich. If from thirty to forty loads of stable manure to the acre could be appropriated, it would be money well spent. Life is to short for it to be an object to wait too long for trees to grow, and planting large ones is an expensive, as well as unsatisfactory business. A tree in a rich and deep soil will grow as much in one year as in five in a poor one. So in preparing a lawn, it is fortunate that, while aiming at the best effects, we are helping our trees also. It is generally best to sow for a lawn than to sod, where much of it has to be done. The edges of the road must, of course, be sodded, the balance neatly raked over and sown. The best kind of grass to be employed in seeding is a disputed point, and it will, no doubt depend in a great measure on the locality. Philadelphia and northward, the perennial rye grass is excellent. It commences to grow very early, and has a peculiar lively, shining green. South of Philadelphia it is very liable to get burned out in summer, and the Kentucky blue grass would be much better. It is much the best to have but one kind of grass for a lawn, provided it is suited to the locality. A mixture of kinds is apt to give a spotted and variegated character, not at all pleasing. Some people like to see white clover growing thickly in a lawn and others object to any thing but green. However, if a good grass rake is employed freely in summer time, the heads of these flowers may be kept from expanding. Where there is a prospect of a month of growing weather, lawns may still be sown with grass seed,—the clover, where used, to be kept for sowing in April or March next. A small quantity of rye should be thinly sown with the grass, which, by the shade it affords will prevent the grass from being thrown out by the frost. The rye must of course, be closely cut in the spring, to allow the grass to get ahead of it.

The latter end of August is one of the best seasons of the year to transplant evergreens. The young growth of the past season has got pretty well hardened, so as to permit of but very little evaporation,—and the earth being warm, new roots push with great rapidity, and the tree becomes established in the ground before cold autumn winds begin. The chief difficulty is that the soil is usually very dry, which prevents much speed with the operation; and the weather being usually very warm, the trees have to be set again in the ground almost as fast as they are taken up; so that it is not safe to bring them from a distance. It is as well, therefore, to make all ready in anticipation of a rain, when no time may be lost in having the work pushed through. Should a spell of dry weather ensue,—which in September and October is very likely,—one good watering should be given, sufficient to soak well through the soil and about the roots. A basin should be made to keep the water from running away from the spot, and to assist its soaking in. After being well watered, the loose soil should be drawn in lightly over the watered soil, which will then aid in preventing the water from drying out soon again.

As soon in the fall as bulbs can be obtained, they should be planted,—though this will not generally be the case till October,—but it is as well to bear in mind that the earlier they are planted, the finer they will flower.

Towards the end of the month. and in September, evergreen hedges should receive their last pruning till the next summer. Last spring, and in the summer, when a strong growth required it, the hedge has been severely pruned towards the apex of the cone-like form in which it has been trained, and the base has been suffered to grow any way it pleases. Now that, in turn, has come under the shears, so far as to get it into regular shape and form. It will not be forgotten that, to be very successful with evergreen hedges, they ought to have a growth at the base of at least four feet in diameter.

FRUIT GARDEN.

August and September are favorite months to plant out Strawberries, with those who desire a crop of fruit the next season. In making a strawberry-bed a warm, dry spot of ground should be chosen, with, if possible a good loamy or clayey subsoil. A moist wet situation is very unfavorable. It is best to subsoil at least eighteen inches deep, and if the soil is poor, let it be moderately enriched with well decayed stable manure. In setting out, take care that the plants do not become dry from the time they are taken up till they are replanted, and see that they do not wither afterwards. Many persons cut off the leaves, if they are afraid of their wilting under hot suns, but a much better plan is to shade. Inverted 4-in. flower-pots are excellent for this purpose; they may be taken off at night. The dews will so invigorate them, that the shade will only be required for a few days. Sometimes in September they may need a good watering; but this should never be attempted unless a thorough saturation of the bed be given; and in a few days after, the hoe and rake should be employed to loosen and level the surface, which the heavy watering will, in all probability, have caused to bake and become very crusty.

Strawberries are best grown in beds about four feet wide for the convenience in gathering fruit, and giving them the best of cultivation. About three rows in a bed, and the plants twelve inches apart in the row, will be a good arrangement.

As soon as the fruit has been perfected on the Raspberry, the canes that have borne should be at once cut out. Some kinds throw up suckers very freely, and by this means rob one another and cause a very poor crop to be produced the next season. No time should be lost in thinning out the weaker ones, and only enough canes left that will be required to produce a crop the next season. The Raspberry ought to be so treated in the summer, that no pruning will be required in the spring to shorten the ends of the canes. In rare kinds where it is of more importance to get up a stock of young plants, than to get up a crop of fruit, this advice will not, of course, apply.

Blackberries will, in the main require very much the same treatment as the Raspberry. They are also very liable to sucker up more than is desirable, and much attention will be required to keep them within due bounds. Neither of these two kinds of fruit should be planted near a lawn, as the roots, if they once get into the grass, are very difficult of eradication and as troublesome as the vilest weeds.

Many kinds of fruit trees that have arrived at a bearing age, may perhaps be growing very vigorously and producing very little or no fruit. Those who have read our remarks in past numbers, will understand that whatever checks the wood producing principle, tends to throw the plant into a bearing state. For this purpose, summer pruning is often employed, which, by checking the most vigorous shoots, weakens the whole plant, and throws it in a fruitful condition. The same result is obtained by root pruning, with this difference, that by the last operation the whole of the branches are proportionately checked, while by pinching only the strong-growing shoots, the weak ones gain at the expense of the stronger ones. Presuming that the branches have been brought into a satisfactory condition in this respect, root pruning may now be this month resorted to. We cannot say exactly how far from the trunk the roots may be operated on, so much depends on the age and vigor of the tree. In a luxuriant, healthy tree, one fourth may be safely dispensed with. In a four year old standard Pear tree, for instance, the roots will perhaps have reached four feet from the trunk on every side. A circle six feet in diameter may then be cut around the stem, extending two feet beneath the surface. It is not necessary to dig out the soil to accomplish the result; a strong post spade, or strong spade of any kind, may be driven down vigorously describing the circle, and doing the work very effectually. Of all trees, the Peach is as much benefited by root pruning as any.

Many of the diseases of the Peach tree appear to arise from the effect of hard winters on the over-vigorous and half ripened shoots. Root pruning has always the tendency, not only to throw a tree into bearing early but also to ripen the wood early in the season, and before the frost can act much to injury.

The Grape vine at this season will require attention, to see that the leaves are all retained healthy till thoroughly ripened. It is not a sign of healthiness for a vine to grow late; on the contrary, such late growth generally gets killed in the winter,—but the leaves should all stay on, to insure the greatest health of the vine, until the frost comes, when they should all be so mature as to fall together. Frequent heavy syringings are amongst the best ways to keep off insects from out-door grapes, and so protect the foliage from their ravages.

HOT AND GREENHOUSE.

Preparations must now be made with a view to stocking the houses for the next winter and spring's use. Geraniums of all kinds may now be readily struck. A frame in a shady place, set on some light sandy soil in the open air, affords one of the best places possible for striking all kinds of half-ripened wood. A partial shade is at all times best for cuttings at the start, though the sooner they can be made to accustom themselves safely to the full light, the better do they usually do.

Seeds of many things may also be sown for winter and spring blooming, particularly Cineraria, Calceolaria, Pansy, Daisy, Chinese Primrose, and some of the annuals. Great care is necessary with the Calceolaria. The seed is so small, that it rebels at the smallest covering of soil. The best way is to sow it on the surface, water well and then cover with a pane of glass until fairly germinated; this will prevent evaporation and consequent drying of seed. Almost all kinds of seeds germinate most readily in partial shade; but as soon as possible after germination, they should be inured to as much light as they will bear.

Many kinds of greenhouse plants as Oranges, Lemons, Camellias, etc, may be inarched or budded at this season. The process of inarching is simple, and consists merely in bringing the shoots of two different plants together. The bark is very lightly shaved for half an inch or more on each shoot, which are then both tied together, and in about two months the union may be examined, and if found sufficiently strong, the scion may be separated and suffered to go for better or for worse with the stock you have selected for its helpmate through life.

VEGETABLE GARDEN.

Towards the end of the month, a sowing of Spinach may be made in rich soil, which will come in use before winter. That desired for winter and early spring use, is usually sown in September in this region. A few Turnips may be also sown for an early crop, but will be hot and stringy unless the soil is very rich.

As fast as endive is desired for salad, it should be blanched. Matting thrown over is the best for this purpose, as the plants are not so liable to rot as when pots or boards are employed. In cold or mountainous regions, Melons are hastened in the ripening process and improved in flavor, by a piece of tile being placed under the fruit.

Celery will require earthing up as it grows, to get it to blanch well. It is not well, however, to commence too early, as earthing up tends, in a slight degree, to weaken the growth of the plants. Take care also, not to let the soil get into the heart in earthing, or the crown is apt to rot.

At this season of the year, more than perhaps at any other, it is important to hoe and rake between rows of growing crops. A loose surface soil not only admits the various gases that the roots luxuriate in, but it also prevents evaporation and checks a too great absorption of heat, and then, besides all this, the weeds are kept down, and neatness and order reigns. After every heavy shower, if the time can at all be spared, the hoe and the rake should be freely employed.

COMMUNICATIONS.

FOREIGN REMINISCENCES.

No. 4.

BY H. WINTHROP SARGENT, ESQ.

One of the nicest of the old English towns is Ludlow, on the border of Wales; and, I think, without exception, the Feathers Inn, built in the time of James II, and all its peculiar features still retained, is more quaint than any thing of the sort in England. Another most interesting thing at Ludlow is the Castle adjoining the town; certainly in as good preservation, and connected with as many remarkable events and histories as anything we met in any part of Europe.

It was at Ludlow that Edward, Prince of Wales, lived after his marriage with Catharine of Arragon, who, after the Prince's death, married his brother, Henry VIII. Here also lived the little Princes who were subsequently smothered in the Tower by their uncle, Richard III. Here, too, Milton wrote his 'Comus,' which was performed before the King and Court on Christmas day. At a later period Butler lived over the Gate House, and wrote "Hudibras." Sir Henry Sidney, father of the famous Sir Philip, was Governor of Ludlow Castle during the reign of Elizabeth.

Ludlow abounds in interesting drives,—one of about 6 miles, through the lovely village of Broomfield, is to Downton Castle, once the residence of the celebrated Andrew Boughton Knight, for many years President of the Horticultural Society of England, and whose authority on all matters of Fruit, thirty years ago, was beyond dispute.

I hardly know a more desirable residence than Downton Castle—a beautiful house, charming flower garden, grand views over a magnificent park. The fruit trees are principally on the walls of a 2-acre garden. The old, original trees of Mr. Knight, fine specimens of training, but with little fruit.

The Grapes are planted at the ends of the houses, 5 at each end, and trained lengthwise—

an idea of Mr. Knight's, which I have never seen elsewhere. The gardener thought he obtained larger bunches, by getting more inside border, which is watered once a week by sheep manure water, pretty strong. The bunches were certainly very large and superbly colored.

Mr. Knight's houses for Peaches, Nectarines, and Plums were old and rickety; and the trees, though beautifully trained, were rugged and mossy; and, though the ornamental grounds were in exquisite order, yet it was easy to see that the present proprietor has none of the ambition or taste of his distinguished ancestor. Though we visited Downton on the 8th of August, yet the present Mr. Knight had not been through the houses, or into the fruit garden, since March. In fact, there was something sad in the whole fruit department, reminding one that the master-spirit which, a quarter of a century ago had so distinguished it, had passed away. The whole garden seemed like a "tale that is told."

We were shown the cover in which Mr. Knight lost his life, having been shot by a friend, who mistook his fur cap moving above the brush for a hare. Near Downton Castle, is Oakley Park (Lady Mary Clive), with some wonderful Oaks, called the "Druid Oaks;" supposed to be over three thousand years old, and the largest in England, except possibly a few in Sherwood Forest. Oakley Park is a very fine estate and well managed. The estate—many thousand acres—comprises all the eye takes in, from the house to the horizon.

The return road to Ludlow passed through Comus Valley, where the Duke of Bridgewater's daughter Alice was lost, which afforded Milton his subject for Comus; also passing through the lane where George Barnwell, the famous London apprentice, killed his uncle.

Moor Park is a fine old place, near here, for many years rented by R. S. Fay, of Boston; also Downton Hall, belonging to Sir Charles Boughton, with wonderfully fine and extensive views, a charming flower garden, beautiful lawn, etc., very pretty walk, bordered by alternate Golden and Irish Yews.

[DOWNTON CASTLE.]

NOTES ON DIONŒA MUSCIPULA,—*Ellis*

BY WM. M. C., WILMINGTON, DEL.

There extends along the Atlantic coast of the United States from Long Island to Florida, a tract of almost level sandy country, varying in width from 5 to 50 or 100 miles, and well known among Botanists at least, as the "Pine Barrens." As a general thing it is but sparsely inhabited and little cultivated, although in New Jersey, the extensive swamps which cover much of its surface, are being turned to good account as Cranberry meadows, and the higher grounds are beginning to be appreciated as being admirably adapted, from the light and warm character of the soil, to furnishing the great markets of New York and Philadelphia with early vegetables and fruits.

This whole region is a paradise for the Botanist. Many most rare and peculiar plants inhabit the swamps which everywhere abound. Some of these plants extend throughout the whole region; some are only found in the Northern or Southern part, and a few, such as the curious little fern *Schizœa*, and the more curious *Venus,Fly Trap*, are extremely local.

Nor is the region to be despised on account of its useful natural products. The Cranberry, as before remarked, is being very profitably cultivated. The White Cedar (*Cupressus thyoides, L.*) which furnishes timber of the most durable character, is in great demand for fencing and other purposes; while the long-leaf or Yellow Pine, (*Pinus australis, Michx.*), and the Live Oak (*Quercus virens, Ait.*), of the Southern States are invaluable trees, the former furnishing a large proportion of the rosin, pitch and turpentine of commerce, besides being valuable for its timber; and the latter in great demand for ship-building purposes.

The rarer plants of this district are in much request among Botanists, and perhaps no one is more desired in collections than that the name of which heads this article. It belongs to the Natural Order Droseraceæ, or the Sundew family, other members of which exhibit in a less degree the traits of the Dionæa. The leaves are the curious part of the plant and are disposed in a circle on the ground springing as they all do directly from the base of the plant, the scape or flower-stem being leafless. The petiole or leaf-stalk resembles considerably an ordinary leaf, being so broadly winged as to be spatulate-lanceolate in the outline; while the blade of leaf consists of two rounded lobes, (when spread out about an inch in diameter) which are fringed like an eyelash on their outer edges and plentifully besprinkled with glands on the inner surface. The latter even extend to and on the cilia. It is these which in all probability secrete the fluid, which will be spoken of presently.—Among these glands are found on each lobe three small hairs disposed in a triangular position, and in these the sensitiveness of the plant resides. They are so placed that an insect can hardly crawl over the leaf without touching one of them; no sooner is this done, than the leaf instantly shuts like a steel trap on its prey, the cilia or fringes clasping together like the fingers of the hands. If the leaf is in good condition and the prey suitable, the glands secrete a fluid analogous perhaps, to the gastric fluid of animals, which dissolves the insect and renders it fit for absorption by the leaf. A good figure of the plant may be seen at p. 168, in Prof. Gray's admirable "Structural and Systematic Botany."

It is somewhat singular that this little herb is only found in the vicinity of Wilmington, in North Carolina, and in the adjacent parts of South Carolina, where it is comparatively common in the damp rich soil bordering the bogs and swamps. It was discovered about 100 years since, probably by John Bartram; as Ellis, the English Naturalist, who first brought the plant into notice, and gave it its botanical name, states in his letter to Linnæus, that in 1765, his friend Peter Collinson had given him a dried specimen which he had received from Bartram. This letter to Linnæus was published, (and a very good colored plate of the plant with it) and in it Ellis states that the object of the plant in catching insects in its leaves was for purposes of nutrition. This, however, seems to have been doubted by Linnæus, as in his "Mantissa Plantarum," published soon after, he speaks of the ability of the plant to catch insects, holding them as long as they continued to struggle, and releasing them upon their becoming quiet; and in this account he seem to have been followed by Elliott and many other Botanical writers. Ellis also wrote of the fluid secreted by the "innumeræ glandulæ rubræ," of the leaves, and also of the "three small erect hairs among the glands," in which the excitability of the leaf resides; but he was mistaken in supposing that the "sweet liquor" is secreted by the leaf as a lure or bait before the insect is captured. I do not know that this fluid is spoken of by any other botanist, except the Rev. Dr. Curtis, formerly of Wilmington, N. C., who has long been familiar with the Dionæa, and many years since published a very interesting notice of it, which may be found in the 1st Vol., of the Boston Journal of Natural History, p. 123.

Being very desirous of obtaining specimens of the plant, the writer made an excursion to Wilmington, N. C., in the beginning of May of last year. The Dionæa was found in considerable quantity, but not a single specimen in flower; although in Chapman's Flora, April is one of the months given as its period of flowering. To make the best of it, a good many plants were packed in boxes and brought away, and finally planted in sandy soil as nearly resembling that of their native locality as possible; this was kept *moist* but not *wet*; and I may here remark that in general the efforts made to cultivate this plant seem to have erred in taking too much care of it. It is not a hothouse plant, as it endures freezing weather in its native place; neither is

it naturally a bog herb and consequently it should only be kept damp, but not deluged with water. The plants soon recovered from the moving and began to grow rapidly, putting forth new leaves and afterwards flowering well. About the 25th of May, they were put out in the open air on the roof of a shed which was somewhat shaded by a plum tree.

Insects being now plentiful and the leaves well developed, operations were actively commenced by the plants; so much so indeed, that in a short time but few good leaves could be found which had not made a prey of some insect. It was soon observed that in most cases where a living object was caught, the leaves did not open and release the prisoner on his becoming quiet, as was stated by Linnæus, but held on to him until he appeared to be dissolved by the fluid secreted around him. The whole disappeared, but it did not at first strike me that it was absorbed by the leaf, and an experiment, soon to be detailed, led me to suppose that the fluid was in some way conveyed to the roots of the plant, there to be taken up for nutriment. Continued experiments soon did away with this idea. After having entirely gone through the operation, the leaves would again open and catch insects; but each time they became less sensitive, and soon refused to close on the insects which traversed their surface. These observations soon suggested this idea of trying them with other things than insects, with what result is given below. I now copy from my note book:

"July 7th. Fed several leaves of Dionæa with fragments of raw beef."

"June 9th. The beef in one leaf is considerably digested and a drop of reddish colored fluid matter hanging from from the lower part of the leaf."

This experiment led me to suspect that the leaf had the power of dissolving animal matter, which was then allowed to flow along the somewhat trough like petiole to the root, thus furnishing the plant with highly nitrogenous food.

"June 18th. The beef in the above mentioned leaf entirely digested and absorbed by the leaf, thus disproving the idea, that the dissolved matter runs to the root and is there taken up for the nutriment of the plant; and the leaf is opening and almost completely dry, and apparently somewhat callous, *i. e.*, losing its delicate texture and not as sensitive as before. In the other leaves in which fragments of beef were placed at the same time as above, all except the gristly parts is dissolved. Two or three leaves closed upon the meat and afterwards opened and suffered it to dry up, probably not having strength to digest it after have gone through the ordeal of moving.

The flowering of the plant is now over, having commenced about June 1st."

Wishing to test some other animal substance, the following experiment was tried:

"June 19th. Placed a fragment of cheese in a leaf of Dionæa. The majority of the plants appear to be doing well and are putting forth new leaves."

"July 6th. The cheese in the leaf after being considerably dissolved, has had a bad effect turning the leaf black and finally killing it, though it does not appear to have affected the rest of the plant. It is very evident that this animal *product* is poisonous to the leaves."

"July 13th. I found to day that a good sized leaf had caught and devoured a large centipede."

"July 27th. Placed fragments of raw beef in eight leaves."

"July 31st. The beef in all the above leaves is being dissolved. They have all closed tightly upon the meat, so much so that the form of each fragment can be readily seen by looking only at the outside of the leaf. A slight shower seems to aid digestion, probably by strengthening the plant; but too much water apparently weakens the effect of the fluid secreted by the leaves. A fortunate circumstance which has just happened shows that this fluid, which certainly always makes its appearance *after* the prey has been caught, is not the result of any decomposition of animal matter. A plum curculio was so unfortunate as to fall into the trap, but being of a resolute nature he determined to escape by eating his way out. When discovered he was still alive and had a small hole through the side of the leaf, but was evidently becoming very weak. On opening the leaf, the fluid was found in considerable quantity around him, and was without doubt gradually overcoming him. The leaf being again allowed to close upon him, he soon died. As a general thing beetles and insects of that kind though always killed, seem to be too "hard-shelled" to serve as food and after a short time are rejected."

August 11th. The beef last put in is entirely gone in three leaves and they are again opening: by one the meat has been rejected, in the rest it is almost dissolved."

Absence from home now prevented further and more varied experiments, which might prove more directly the absorption of the dissolved matter by the plant. But I cannot doubt that this is the case; and if this be the case, of what use is it to the plant? Certainly I think there can be no other than nutrition. The great Creator does not form mechanism, however curious, in mere sport of power; but we may believe they are intended to subserve some useful purpose. Here then we see that this most rare and curious plant is provided with a trap, than which, as Dr. Curtis well remarks, it is impossible to conceive how one could be better devised for the purpose intended; it is so placed that unwary insects are most likely to fall into it; and after catching them it turns into a kind of stomach, and deliberately proceeds to eat them up.

Other plants of the same family, (several species of Drosera) as is well known, catch small insects, by their glandular sticky hairs and bending all of these to the object which are likely to reach it, apparently suck its juices. Dr. J. Gibbons Hunt, who has made excellent preparations of portions of Dionæa and Drosera for the microscope, informs me that each hair of Drosera rotundifolia has two sets of ducts. An interesting experiment, somewhat like some of those before mentioned has been made by Mr. L. A. Millington and may be found described in the *American Naturalist* for April. It is well known also that the singular leaves of the Side-saddle plant (Sarracenia purpurea, L.), are usually found half full of water and dead insects. Whether these subserve the nutriment of the plant is doubtful.

But so far as I know the Dionæa is unique in the completeness of its mechanism and its operations; and as Prof. Gray has lately informed us that one of the most sagacious and suggestive of modern Naturalists, (Mr. Darwin) will probably soon publish his experiments, and observations upon it, we may expect a full elucidation of the structure and operations of this most interesting plant.

INCIDENTS OF THE SEVERE WINTER.

BY L. B., PHILADELPHIA.

Your instructive notice of the lesson the late winter has taught us will not soon be forgotten. It has cost every owner of trees and gardens losses of an unusual character; but hereafter we shall at least know how to avert similar disasters, and learn to protect all valuable trees and shrubs against exposure in severe winters. A few incidents of my experience show how true your explanation is, that exposure to the biting, absorbent winter winds, destroys their life as nothing else will.

An Isabella grape vine two years old was killed nearly to the ground, and a hardy grape from the Washington propagating garden, said to be peculiarly hardy, (name lost) and four years old, was also killed nearly to the ground. Concord and Diana vines were shortened in very seriously, though cut clear of unripened wood early in the fall. On the contrary European vines, loosely tied with cornstalks or straw received no injury, not an inch being cut off. Some of these were standing, and some were laid on the ground. And even worse than the vines, was the experience with peach and pear trees: all the blossom buds dropped from the dwarf peach trees, and a Duchesse pear tree though never failing before and set to blossom full, only produced abortive blooms. In short, every exposed fruit tree was struck as with a paralytic shock, and they recover very slowly since. Another incident was that a rose only half hardy, at least in exposed situations, Jacquimenot, being protected only by a loose tie of straw, was kept in perfect condition to the top of the stems, which were nearly four feet high, and in a front area peculiarly exposed.

PURSH'S JOURNAL.

(*Continued.*)

31. Early this morning I left Easton, the weather very sultry & warm; by the time I came to Richmond, about 13. m. from Easton where I took dinner I was overtaken by a thunder shower, which continued very severe for two or three hours, & afterwards turned into a drizling rain; being prevented so long, from going on & having about 13 or 14. m. to travel to come to the place where I had sent my trunk to, I thought it best to stay over night & take my leisure in going through the gap, which I was very anxious to examine strictly. On my road to Richmond I observed nothing new. The Podophyllum was in full flower. The road goes all the way over barren and dry hills, producing the same plants in general as near Philada.

Jun. 1. When I got up, I found it very cloudy, with drizling rain, after breakfast it looked somewhat better, I took the road, but I had not went past 4. m. it began to rain again pretty hard; about two miles farther I came to a publick house on the River, where I stood for some time to get dry & let the rain over, wishing very much to come to my trunk beyond the gap, I ventured out again, at the distance of about 2 miles the road began to get interesting, being on the foot of the mountain, which forms the Water gap; But I was very much disappointed in my intention of spending a good part of the day here, the rain begining again very hard, I had to make the best & the quickest of my road, I observed nothing new, a species of White Violet with deep cordated leaves I think I have seen before; on the rocks I found Nephrodium lanosum Mx. & Spiræa trifoliata for the first in flower this season; a species of Erigeron is very plenty here, but suppose it nothing else than E. purpurascens. The scenery of this gap did not answer my expectation in grandeur; the mountain makes a very spacious opening for the river & the declivity of the rocks & hills on both sides are not steep, but very gradually descending, so much so that I thought I could ascend it in any place required. Since I had to be in an hurry, on account of the weather, I determined to return some day this week back to it, & have an attentive examination, I arrived after a short but disagreeable day's travelling at Mr. Houser's where I found my trunk safe; This place is about 2 miles from the gap, & I have chosen it for a place of making my stand for excursions in this nighborhood, as long as I think it worth my while.

2. This morning still rainy; about 10 o'clock it seemed to clear off; took an excursion on some of the hills. & along the Smithfield creek; Ranunculus philonotis, Anemone thalictroides, &c. in flower; on the creek I seen the Acer glaucum with its seed shed; this maple seems to be a different species, though in general taken as a variety. Justicia pedunculosa in great plenty, just sprouting up. The sandy banks covered with Equisetum hyemale & arvense, Scrophularia nodosa? (flowering).

After dinner I took an excursion up the Delaware on the road to the Manysinks; I begin to despair of getting anything interesting in this quarter, even the plants common to the banks of Schuyllkill which are any ways interesting? I dont observe here, it is an arid slate & lime stone barren; though very finely timbered.

However I expect to try to morrow the gap again, if the weather will permit it.

3. This morning I set out for the Gap; I ascended the west side of the mountain in several places, to have the advantage of all kind of situations, but my expectations of this place, were still disappointed; A very rapid run which makes beautifull little cascades, & nearly rises at the top of this mountain was the place, were I expected to see something new; but after all pains & trouble, I found it to be the old story again. I made the following list of all the plants in their order as I observed them. The Geranium Robertianum is the only plant I think not common, it grows in great plenty on wet rocks & makes a very handsome appearance. The banks of the river are covered with Hemlock, Black Birch, Beach, Chestnut, Hickory, Walnut, Carpinus, Oaks, &c., in great variety & the sides of the hill with the same kind of timber in proportion to their more or less fertile soil. I found in full flower Potentilla reptans, Rubus trivialis, Geranium maculatum—Fragaria virgin. Viola palmata, Erigeron bellidifol. Cerastium vulgatum, Arabis lyrata, Sanicula marylandica (b.) Menispermum canadense, (b.) Ranunculus abortivus Houstonia cœrulea, Spergulastrum lanuginosum? Mx.; Rubus odoratus (b.) Aquilegia canad. Heuchera americ., (b :) Oxalis stricta, Myosotis virgin?—Veronica agrestis, Oxalis violacea, corniculata, Hieracium venosum (; bf) Rumex acetosella, Cratægus coccinea, Leontodon Taraxacum, Anemone thalictriodes, Aralia nudicaul. A. racemosa, Smyrnium integerr. Panax quinquefolia (b.), Medeola Virgin. three of the stamina, which are placed alternate with the inside petals are longer than the three which are opposite them. The three side stigma is sessile.—Poa trivialis, viridis, compressa, Elymus canadensis without flower. In seed—Thalitrum dioicum, Sanguinaria, Saxifraga virginiensis, Betula lanulosa, Mispilus canadensis, Acer glaucum, Gnaphalium plantagineum, Arabis falcata, Azalea nudif.

Without flowers—Rhus typhinum, radicans, Verbascum Thapsus, Rubus sp; Actea racemosa, Clematis virginica, Ampelopsis quinquef., Allium cernuum, Eupatorium perfoliatum, ageratoides, Rosa, Hypericum perforatum, Collinsonia, Impatiens, Marrubium vulgare, Sambucus, Mentha, Lysimachia quadrifolia, Prenanthes, Kalmia latifolia (b.) Rhododendron maxim. Veronica virg. Ptelea trifol. Spiræa salicifolia, Sonchus spec. called Lyons heart good for the snake bite, taken in milk. The species of ferns I observed were Nephrodium thelypterioides, acrostichoides, marginale, lanosum, bulbiferum, punctilobulum, Filix femina, Adiantum pedatum, Polypodium vulgare, Asplenium trichomanoides, Trichomanes, Osmunda interrupta, cinnamomea, Pteris aquilina, atropurpurea, Onoclea sensibilis, Marchantia a species new to me.

I went three miles beyond the gap and as I found it useless to clime up the mountain any longer, I thought to pay all attention to the situation of the gap & its turns in my return accordingly after taken some refreshment at Dills's ferry I followed the main road through the gap; this ferry is three miles from the mountain.—About here the River runs from N. N. W. (the direction of the River were taken with a simple small pocket compass, not noticing the variation). The banks high & the ground covered with loose stone mixed with rounded off pebles of all sizes. The Yersey shore seems to be lower & not much broken. One mile further on from the ferry a chain of high hills comes at some distance towards the shore, on both sides of the water.—Two miles from the ferry the shore very steep covered with Rhododendron &c. great quantitys of loose stone woren by the water. The chain of hills draws closer to the water, about three miles from the ferry, the gap begins; the kind of bottom land which lays between the water & the high hills, is of a barren slaty nature, mixed wite rounded peples. A considerable large Island, lays at the mouth of the gap; The River runs more from the north; The main ridge of mountains, through which it breaks is about a mile over, & the two faces of the mountain in respect to their strata quit corresponding. Those strata make about an angle of nearly 45° from N. W. to S. E. & consist of indurates lime stone granit. Within about 40 yards apparently from the top, the face of these rocks is rotten slate; which cuts off on both sides into a straight line; this slate can not lay under granit, but must have been a vain, on which the water worked & made the present bed of the River.

[The diarist here gives a rough sketch.]

After passing this place the side of the mountain forms the banks of the river & an artificial road leads along the steep banks, the river soon after has its course more from the N. W. & keeps in this direction more or less for a mile & a half, where an island is by which it turns more from N. After passing 2 miles along this close mountain road, the valley opens, into a kind of a bottom terminates & surrounded by hills & the river which keeps now close to the main ridge receives several large creeks coming from all directions. In this bottom is the house of Mr. Howser where I but up at; it is called 6. miles to Dills's ferry, from where I began my description.

Jun. 4. This day I made some small excursions about the nighborhood of Mr. Howsers—Having been pretty much fatigued yesterday, & intending to go to Minisinks to morrow, I dit not do much; but even the little I was about convinced me more & more that this were not a place for new discoveries. The Ideas which I have allways formed about the valleys beyond the blue ridge of having been large rivers or lakes, still I come with more proofs to my mind; the water gap, which probably has been a large cascade in former ages, & the country behind it, have so much weight in this conjecture as any I know; a well which old Mr. Howser dug about 40. feet deep, the house standing on an elevated spot may be 80 or 100 feet above the river was found to be entirely river sand, which still can be seen on the bank raised therewith.

Jun. 5. This morning I set out on an excursion up the River, I had to call on a man who took my trunk from Easton here, who had told me, that in his nighborhood there was a very rich valley; I went through it, to his house about 8. m. from Howsers, but observed nothing materially new; a species of Ranunculus with very long limber branches, which I suppose to be the R. repens & a viola like the debilis of Michx; which grows near Mr. Johnes's mill in Blockley. At the house of Mr. Coolbaugh, the man above mentioned I took dinner & a man coming in who wanted to go as far as the beginning of Minnisink that night, I availed myself of the opportunity of having company, to get there this night yet. We had about 19. or 20. m. to come to the place of his destination, it being one o'clock when we left the tavern, & yet we reached it before it was quit dark; when we came within 6. or 7. m. of it it began to rain very hard, but we kept travelling on. The Minisinks I first understood were on the Pensylvania side, but there is no such thing; the country calld so lays in Sussex county New Yersey & extends from the New York line about 16. or 18. m. down the river & about from 3 to 11 m. back. This course I seen nothing new, the hills along the road are covered close with timber & Cimicifuga Serpentaria (Actæa racemosa) Aralia nudiflora & here & there patches of Podophyllum here called Mandarach mixed with abundance of Houstonia cærulea & other common plants of similar situation are the only cover of the ground. We crossed the river at dark & took up lodging at Mr. Ennis's, who keeps a ferry & a house much frequented by the raftsmen. It looked very much for a heavy & settled rain.

Jun. 6. Rain all day, my anxiety of seeing this place was disappointed for to day but being pretty much fatigued, I expected that the disagreeable rest I had in a house I did not much like, would still be so much more to my advantage; I slept most all day.

Jun. 7. Sundays. Set out for an excursion up Delaware through the Minisinks. Following nearly the banks of the river, without road, I expected to see something interesting — but nothing occured to me. In several places the Salsola prostrata grows in the sands, Cistus canadensis beginning to flower—I went up as far as the line of New York. Crossed the River & went down it to a small village called Millford here I stood over night.

N.B. The soil through this part of Minisink is similar to the lower part of Yersey. The banks are covered with Silver or White maple, Prunus virg. Tilia americana, Platanus & Chestnut Oaks, Humulus lupulus, Celastrus, Uvularia perfol: in flower.

Jun. 8. Shortly before I left this to return to Ennis's down the river I learned that a Post office were kept in the tavern I had stopped: I wrote a few lines to Dr. Barton to inform him of my progresses in a few words: I set out from here, along the banks of the river on a very interesting road, going sometimes along a precipice of immense height down to the river. Millford lays on Saw creek, 1. below a small creek call'd White brook; 4 or 5 lower down the Connecheague 6 m. lower Reamannskille—from there to Dingmanns bushkill—along the river hills Tragopogon virginicum, a very handsome coloured plant, Scrophularia nodosa, here I took an excursion up through the mountain which are very high here: The berries of Gaultheria ripe, very good eating. On the highest knob which was exceeding barren I found Lycopodium rupestre. The Pyrola umbellata calld here Princess pine—Cistus canadensis. In descending the top I came to plenty of Kalmia angustifolia & soon after to a springy piece of ground which led me to a stream of water, which finally forms a beautiful Cascade which I admired so much the more as I was very dry & the water most excellent. A great abundance of the different sort of ferns & mosses common to wet shady places cover the rocks & Arum triphylium in full flower, with several other common plants. At Dingmanns I crossed the river over to Ennis's where I after a long & fatiguing journey arrived late in the evening. This day I killed a monstrous large snake, which I seen likewise in Virginia calld there Black Viper, here they call it blowing Atter, it is not common but I was not able to examine it, partly for want of time & chiefly on account of the most horrid smell it emitted, they are said to be very poisonous but on opening the mouth, I could not observe the structure of that kind in her teeth.

To be Continued.

ECONOMY IN COMMERCIAL PLANT HOUSES.

Read before the Pennsylvania Horticultural Society, July 7, 1868.

BY EX-PRESIDENT D. RODNEY KING.

The subject I have chosen for an essay though an eminently practical one, is one that can be but superficially considered in the limited time allowed me, and is also one on which I can hope to throw but little additional light.

The subject naturally divides itself into three parts or divisions, which I propose to consider separately and in detail.

1st—*Economy in construction*, including all the details or sub-divisions, such as materials of walls, construction and glazing of roof; shape, size, location, staging, hydraulic arrangements, &c.

2nd.—*Heating*, including various kinds of fuel, heating apparatus such as furnaces, flues, boilers and pipes, tanks, bark, leaf and dung beds, modes of excluding the outer air, &c.

3rd.—*General Management*, such as potting, watering, ventilation, shading, &c.

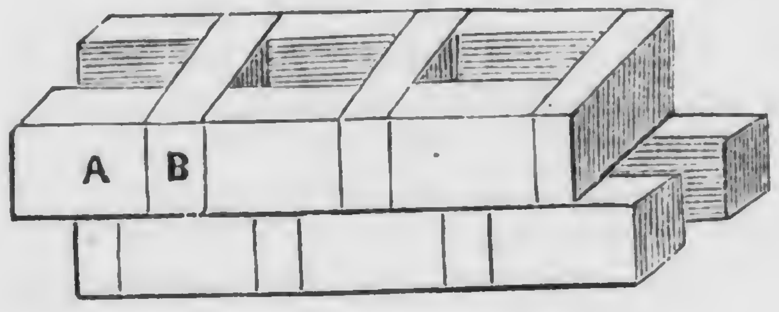
I will now proceed to the consideration of the first division of the subject, viz., *Economy of Construction*. In regard to the *walls* of the plant house, the most economical are those constructed of wood. Procure good cedar, chestnut or even oak posts of the required length, plant them solidly in the ground, as in making a board fence; cut them off to the required height and level by a chalk line and spirit level, nail on top of them flatwise and horizontally projecting about 1½ inches beyond the front of the posts, a piece of 2 by 4 hemlock or white pine scantling, and within about a foot of the ground, saw and mortise out notches in the front of the posts about 2 inches wide and 1½ inches deep, and nail in them, edgewise, a piece of 2 by 3 scantling. Then on these two pieces of scantling, nail vertically or up and down, inch and a quarter second common white pine boards, ploughed and grooved *and well seasoned and dried in the sun.* The boards should be bought of 16 feet lengths, so that they may cut up more economically. If the path to the house is dug 2½ feet below ground, the front wall or side of the house need not be more than 3 feet 1 or 2 inches high, which will enable you to cut five lengths out of a 16 foot board, or if the house is intended for small plants 2 feet 7 inches high or 6 lengths.

If it is thought too expensive to have the boards ploughed and grooved they can be nailed on and left until they are thoroughly shrunk in the sun and then nail plastering laths over the joints; the gable end walls can be built on the same principle, if the house is low, but if a high one had better be regularly frame morticed and tennoned.

If the ground on which the house is built is uneven, the boards in the side walls should be cut of one uniform length and the earth banked up to them. This saves board and makes the house look better. If the house is on the fixed roof principle, that is with permanent sash bars, instead of moveable sashes, there should be nailed in a slanting position on the upper 2x4 scantling, a board about 8 inches wide.

If a more durable house is required, or in cities where wooden buildings are prohibited, stone or brick must be substituted for wood. In all cases the foundation walls below the surface should be of stone, as brick under ground soon becomes soft. If stone is plenty and cheap, the walls may be built 16 inches thick, with foundations 18 inches thick. If brick is used, a nine inch hollow wall is the cheapest, dryest, and warmest. I am surprised that houses of this kind are not more frequently built. There is no difficulty in building them even by a bricklayer, who has never seen one. On the solid stone or brick foundation, about 12 inches thick, lay two courses of brick on edge, so that the wall will measure 9 inches thick, with binders on edge between each as shown in the annexed Fig I. A. being the brick on edge and B. the binders.

FIG. 1.



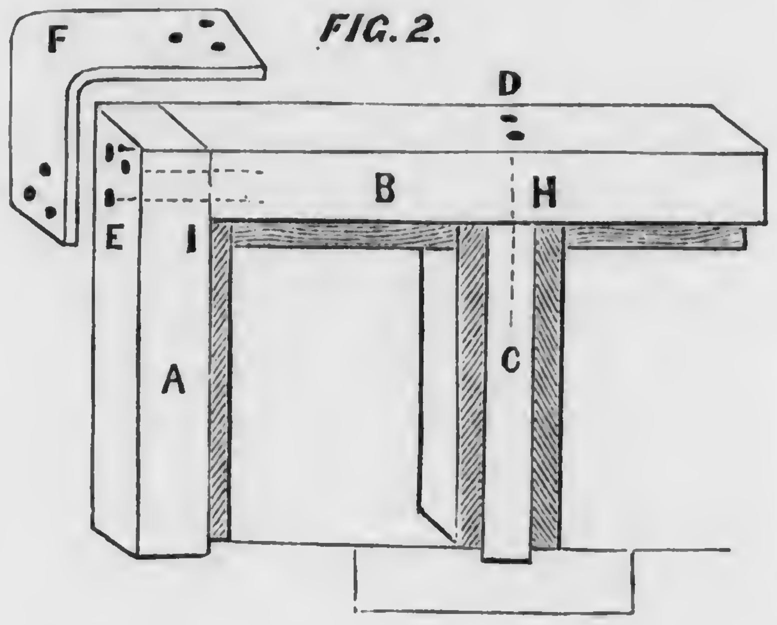
Very good specimens of this kind of building can be seen in this city on south 10th St., nearly opposite the Moyamensing Prison, built by our late lamented fellow member, Jas. D. Fulton, some 25 years since. They consist of two extensive greenhouses and a one story dwelling house and they are at this time as strong and substantial as when first erected. Sash or windows are seldom, if ever introduced in the front of commercial greenhouses, as they add to the expense and make the houses colder, but in houses on the fixed roof principle, ventilators of inch board working on hinges are frequently introduced at short distances along the front immediately under the *plate* or top scantling.

Having thus briefly described the construction of the end and side walls of the house, we come next to consider the construction of the roof including the glazing.

The *fixed* roof is the most economical and expeditious in construction, and if carefully glazed, the warmest and dryest. This mode of building is now so common that it is scarcely necessary to describe it. Take one and a half inch, or better still, 2 inch second common white pine boards of the required length, say 10, 12, or 16 feet long. Send them to a sawing and planing mill and have them first planed, then ripped up into strips of 2½ to 3 inches in width, then rebated so that the glass will have a bearing of not less than ¼ and more than half an inch on each side. These sash bars should be securely nailed or screwed at the upper end, to the ridge pole (if a double pitch roofed house) or to the wall plate if a lean-to house, and also to 2x3 purlins running lengthwise of the house, supported every 6 feet by pieces of 3x4 scantling. If the sash bars are 10 or 12 feet long, one purlin will be sufficient, but if 16 to 20 feet long, two will be required. These purlins are not only necessary for strength, but also to prevent the sash bars from warping in the sun, which would cause leakage and in some cases would allow the glass to fall out. The arrangement and construction of the ventilators will be treated of under the third division of my subject. Although a fixed roof is the warmest, dryest and cheapest kind of roof, yet it is frequently the case that the nurseryman is compelled by various reasons to use moveable sashes, as for instance when the ground is rented on a short lease and frequent removals are the consequence, or when plants are grown in the open ground inside the house, instead of in pots, and the removal of the sashes during the summer is necessary.

Moveable sash as usually made, are expensive on account of the great amount of manual labor expended on them. But I have recently had made, principally by machinery, a large number of greenhouse and hot-bed sash that I have found sufficiently strong, and that cost but little more than a fixed roof. Fig 2, is a section of the greenhouse sash. A and B. represent the three outer sash bars, viz., the two sides and top, which can be either 2 or 3 inches wide, but I have found for 8 feet sash 2 inches sufficiently strong and stiff. They should be of good clean second common 2 inch white pine, sawed, planed, and rebated by machinery *on one side only*, the rebates a quarter of an inch wide and half an inch deep. The middle sash bars C should be made of the same stuff 2 inches wide and rebated on each side, ¼ inch wide and half an inch deep. The length of the sash should, if possible, be regulated by the length of the plank so as to avoid waste. If 12 feet long, the sash bars can be nearly 6 feet long. If 16 feet long, 8 feet and so on.

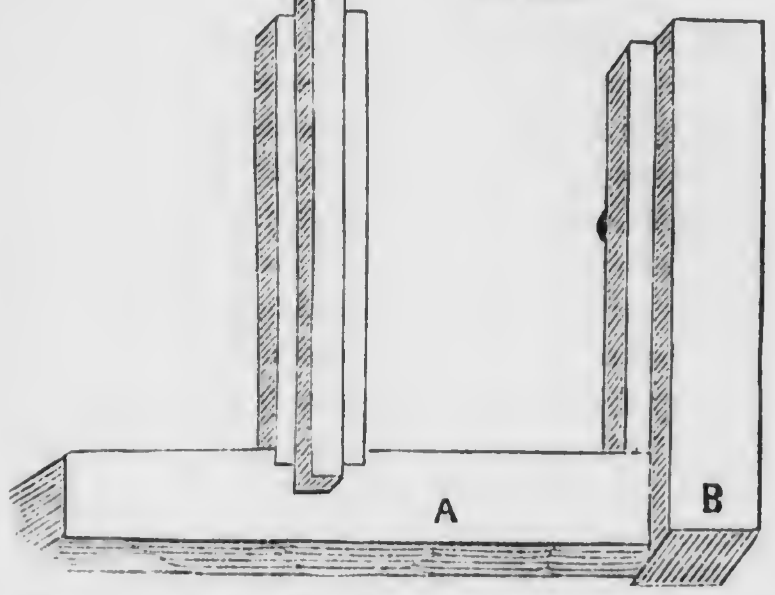
FIG. 2.



If the sash are intended for a greenhouse, where they are not often moved, it will answer to put them together with three ten-penny nails, at each corner, as shown at E; but if for hotbed sash, screws should be used. Corner pieces of hoop iron, punched by a blacksmith, (as shown at F,) and put on with large sized lath nails, serve to stiffen the joint and prevent the nails from drawing,—but this is not absolutely necessary.

The upper and lower cross bar of the sash B should be notched in, as at H, the depth of the rebate, to receive the sash bar C, and the side or outer bar A, should be notched in, as at I, for the same depth. This not only is necessary in order to bring the rebates together, but adds greatly to the strength and stiffness of the sash.

FIG. 3.



The lower cross bar, as shown at A, fig. 3, should be of less thickness (say half an inch) than the other sash bars, and should be perfectly plain without any rebate. This allows the glass, when the sash is glazed, to project over the bar A, so that the water runs off without obstruction. If the sash are intended for hotbeds, the side bars should extend 5 or 6 inches beyond the top and bottom bars. These ends are convenient to handle them by, and also serve to strengthen them. If the sash are over 6 feet long, they should be braced across the middle with an iron brace ⅛th of an inch thick, or a wooden one half an inch thick.

The great saving in these sash is in the labor. The ordinary carpenter cannot generally make more than three, or, at most, four common hand-made sash in a day; whereas, I have had *fourteen*, and sometimes more of the above described sash made in the same time. Indeed, it does not require a carpenter at all to put them together. Any person accustomed to the use of a saw and chisel, can make them. Some ten or fifteen of the bars as they come from the planing mill can be laid side by side on a work bench or table and all of them marked out by a standard measure and a square, and then all of them can be sawed to the proper lengths at once.

We next come to the glazing of the roof. Putty has been pretty generally discarded in glazing the roofs of greenhouses except for *bedding* the glass in, and this is necessary in order to exclude the cold air and to prevent leakage. In glazing, the first operation is to take soft putty and with a glazing knife or your thumb and first finger, coat the rebate with putty to the depth of the one sixteenth of an inch, or the thickness of the glass used. Then, commencing at the bottom of the sash bars, put in a pane of glass with the rounded side uppermost. This is important, as nearly all common windows glass has a curve in it, and by keeping this curve always uppermost, the glass fits closer and more effectually excludes the air and moisture. When the pane is in its place, press it down firmly *at its upper end* until you feel it touch the wood of the sash bar. Then secure it in its place by half inch cut sprigs as follows: One on each side at bottom, to keep the glass from slipping down, and one on each side, within quarter of an inch of top of the glass, to keep it in its place, and also to keep the pane above it from slipping down.

(*To be Continued.*)

A GOOD STRAWBERRY FOR PRIVATE GARDENS.

BY L. B., PHILADELPHIA.

Allow me to say a word in favor of a strawberry that has, with me, proved very acceptable, and while for market purposes, I believe it is generally rejected, it is really very valuable for amateurs and private growers. It is the *French's Seedling*. I have found it remarkably easy of cultivation, a modest grower, small rather than large, yet an abundant bearer. I picked the first, the largest and the latest berries from it in the season 1867; many measuring $4\frac{1}{2}$ inches in circumference. I find in 1868 the bed which bore so abundantly in 1867 quite as well loaded now, while other varieties—Triomphe de Gand, Wilson's Albany and Lady Finger at least,—all expanded or re-set. I moved plants of French's Seedling, both in the fall and this last spring, and yet find them bearing freely. I can do anything with it, in short, and yet get a bountiful crop of delicious fruit. Nothing can equal it in tenderness and delicacy of flavor.

Its fault we all know is that it is too tender to be carried to market, but this is no disadvantage to one who cultivates for his own use. On June 6th, 1867, I picked the first in that year, many berries being over 4 inches in circumference. On June 7th, 1868, I again picked the first ripe berries of the season, several measuring $3\frac{1}{2}$ to 4 inches. No berries of any other variety were ripe at these dates in either year.

A VISIT TO DELAWARE.

BY B.

To a person who wishes to realize the fact of a State being a Peach Orchard, a trip on the Delaware Railroad would be entertaining—for, from Wilmington to the dividing line of Maryland, there seems to be scarcely five miles which are not planted in Peach Trees; and we were told that the same was the case through the whole State, even 25 miles from the railroad.

Our first stopping point was Milford, the largest town in the State south of Dover, (Mr. Williams has given a very good statement of the State as far as Dover,) the place which we were most interested in seeing. We found they were alive to the fact of Delaware being the "Garden State of the Union." Everywhere large garden and truck patches were being prepared; and a spirit of progress, in fruit culture, pervaded the entire people.

One of the most enthusiastic pomologists in this section, and one who has ever shrunk from publicity, is George R. Fisher, Esq., (about five miles from the town). He has, in the last thirty years, planted 5 or 6 orchards; and, although now verging on 80, is still planting, grafting, budding and pruning his trees, and talks of them with the affection of a father for his children. Seven or eight groves which were planted by his hand, have grown to large, stately trees. A row of Cherry trees, nearly half a mile in length, is a striking feature of his place, serving to shade a drive to a long lane leading to his dwelling. He has many of the finest varieties of Pears in cultivation, several of which were imported for the first time last year.

From Milford to Lincoln, a new settlement, (the Vineland of Delaware,) is 3 miles. Here, our friend Lukens Peirce has a thriving young nursery. The interest in fruit culture is a leading feature, and, although Strawberries were only just beginning to ripen in this section, they were sending two and three thousand quarts daily from this place, which, four years ago, was a howling wilderness.

Georgetown, the present terminus of the Junction and Breakwater R. R., is also a thriving town—the County town of Sussex County—noted for its number of lawyers and pretty women, and, we think, will shortly be for its fruit culture also.

One of the finest and most liberally kept places near this town is that of James Anderson, Esq.,

Cashier of the Farmers' Bank at Georgetown, whose hospitality and cultivated taste, make it a favorite resort of many of the people of the surrounding country.

He has a fine lawn, of about four acres, tastefully planted with Deciduous and Evergreen trees, and shrubs. Fruit culture is also a favorite pursuit and one to which he looks for great results, especially Pears—having an orchard of 8 acres, and thinks of planting many more. He also has about fifty acres in Peach trees, and fifteen in Apple trees, besides quite a number of Cherry and other fruit trees. Mr. Charles C. Stockley, of the same place, is also an enthusiast in fruit culture, especially with Peaches and Strawberries, having over fifty acres of the former, and 12 or 15 varieties of the latter. He was the first person to introduce the newer varieties of Potatoes into that section, and has been so successful with them as to cause a general desire for their growth over the old and failing varieties; so much so, that he could but with the greatest difficulty keep enough for his own planting.

Bridgeville is another prosperous town on the Railroad. Here Mr. D. S. Myers is endeavoring to cultivate a taste for the culture of trees and flowers, we believe with marked success. We were not fortunate enough to meet Mr. Myers, but found his name a household word.

Laurel and Seaford are also towns which are fast progressing in horticulture. The walls of their houses covered with flowers, and their beautiful spires, presenting a pleasing sight from the Railroad.

The next point of stoppage was Salisbury, Md. a town (or city) at the head of the Wicomoco River, having one of the finest water powers in that section—numbering five large millponds and eight or ten mills in a radius of five miles. This is the best situated piece of country north of Norfolk for trucking and fruit growing, having a gentle rolling incline to the southeast, well watered, and the land of a rich sandy loam, with a gravelly clay subsoil, and land yet cheap, and building material plenty and low. The quantities of lumber exceeded anything we had ever witnessed; and, we think, must have covered an area of at least thirty acres, piled 10 to 12 feet high.

The oyster trade is also a leading feature of the place, furnishing hundreds of tons of shell lime for fertilizing purposes. From what we could judge, the season here is fully as early as Norfolk; for, while 30 miles above the berries were just ripening, here they had gathered their main crop 8 or 10 days before, and had been, for 12 days, eating new Potatoes of good size and quality.

Here we found that intelligent and energetic horticulturist, Mr. C. Hartwell, hard at work among the people, preaching up fruit culture here, floriculture there, and improvement everywhere; distributing trees and seeds of rare things, and giving advice to all who wish to follow his doctrine; at the same time directing great improvements of nearly 2000 acres—planting on one place 20 acres of strawberries—largely in Peaches and other fruits.

There are some beautiful mansions and pretty ornamental grounds in and around the place, and even the poorest looking dwelling was literally covered with roses and honeysuckles. One of the finest places is that of Mr. Troutvine, which embraces nearly five acres, and is tastefully laid out and planted with flowering plants, shrubbery and fruits, which mostly being in flower, presented a gorgeous appearance. He has, also, a great curiosity in an oak tree, which, for 10 feet high, measures from 9 to 8 feet through; while above that it suddenly began at about eighteen inches, and has grown symmetrical to about 30 feet, being its natural form and growth.

The Strawberry king of this place is Mr. Parsons, who gathered about 1200 quarts from about $\frac{1}{4}$ of an acre, and from five different varieties, the Wilson being the most productive, the Lady Finger realizing the highest price, and the Agriculturist being the largest and strongest grower. Some few berries were noted as measuring seven inches in circumference, and at the eighth picking we were induced to accept 4 quarts of the finest size Agriculturist we have ever seen—the most of them measuring 4 and 5 inches.

Now as to the fruit prospects. Strawberries proved a good crop and paid well. Peaches, generally, will realize but about half a crop, and that mostly of the earlier varieties. Apples (with the exception of just around Salisbury) are an entire failure, although the blossoms foretold an abundant crop. Pears, as yet, promise poorly, and as Raspberries and Blackberries have not been very extensively planted, they are not to be considered as realizing anything. The wet and backward weather seemed to pervade the entire section, yet we found the people hopeful and ready to make the best of their opportunities.

As an evidence of the violence and extent of the snow storm which occurred here about the first of April, we saw a great destruction in Pines and Cedars. Large trees were broken off, and thousands of smaller ones bent to the ground. It is computed that at least $200,000 worth of lumber was destroyed in Sussex Co. alone, and the track of the Delaware R. R. was covered for miles with broken limbs and trees.

TOMATOES AND CAULIFLOWERS.

BY P. CORCORAN, SHARON, PA.

Mr. James Westerman of this place, has erected a vegetable house on my employers plan, which I have already described in the *Gardener's Monthly*. It is a span roofed house 45 feet long by 20 wide. The Tomatoes are planted all down the centre of the house, and we are never without a supply. To day (April 19th) I could gather a bushel of much finer fruit than I ever saw out of doors. I was very much interested in an article by L. B., on growing them on the walls of his dwelling house, and that another New Jersey correspondent thought it would not pay to take so much trouble. I do not suppose it would be worth any ones while to build a wall on purpose to grow tomatoes. L. B., of course did not suggest any thing of the kind, but this I do know from our experience here, that it would pay any one to build a house to grow tomatoes. There is this additional advantage, that while you are growing tomatoes in the centre, you can have bedding plants on the outside.

Another thing astonishes me is that you celebrated Philadelphia gardeners, whose names are sounded through the length and breadth of the land, yet cannot grow Cauliflowers enough for your own market. For I see by Buist's Catalogue, that your markets are supplied by growers from Long Island. It is so easy to have them. I sow the seed in a hothouse in January. When the plants have two or three rough leaves, I prick out into another box to make them tough. About the 5th of February I make up a hot bed, the materials only about 20 inches thick, and put in about 2 feet of rich soil, and to day (April 19th) I have plenty, 12 to 18 inches in diameter; whenever necessary to water, I give them a good soaking.

Postscript, June 1st. I send you to day two tomatoes, from plants I commenced forcing all along, I planted the seeds in February, 1867. In March I transplanted them into the centre of the pit, in two rows, using rich garden soil. I kept them staked up all the time, and watered freely, I had them ripe in May. In September I took out some of the old plants and transplanted with young plants. The old plants I pruned in November, and I find these old ones have borne all along this year just as well as the young ones. The tomatoes sent you were from plants which have been bearing for fifteen months continually, and they are bearing yet as freely as if they were but three months old. The variety sent are the Tilden. I think grown on this system a house would certainly be profitable.

[We regard Mr. Corcoran's paper as among the most valuable it has been our privilege to give to our readers. Nothing but a plain practical gardener, with no pretension but to be useful to others, he gives in a practical style results as he has found them, and from which all may profit. So many gardeners complain that their employers take no pleasure in their places; but if they would take a little pains to suit themselves to circumstances, and produce a few cheap luxuries, in some cases at least they might take more pleasure in giving their gardeners encouragement. Poor as we are—and Editors are proverbial for their poverty—these delicious tomatoes, although there were but two, came very near being our ruin; for we could not help resolving to keep a gardener in order to raise tomatoes, cauliflowers and other such treats for our own table and only the suggestion of one of our household, to whom we usually submit such important questions, that possibly we might not get the judicious man to attend to our wants, saved us for once. Had we more money, we should certainly run the risk.—ED.]

CLINTON HYBRIDS AND OTHER HYBRIDS.

BY JACOB MOORE, ROCHESTER, N. Y.

Dr. Wylie of South Carolina, in his interesting communication in the May No. of the *Monthly* asks for the experience of others respecting Clinton hybrids. As I have raised such hybrids I will inform him and others concerning them.

The same year, 1860, I crossed the Diana with Black Hamburg. I crossed the Clinton, also with mixed pollen of Golden Chasselas and Black Hamburgh. I obtained three or four seedlings only, the best one I named Improved Clinton. The cluster and berry were somewhat larger than the Clinton; the latter oval; color black; tender fleshed, sweeter than Clinton, rich and sprightly, by some pronounced excellent. The fruit, however, when about half grown would in-

variably be more or less affected with mildew, and the shoots and foliage also; towards the close of the season. The vine was a rapid grower, with Clinton-like foliage, and proved hardy usually, when exposed on the trellis during the winter. It was in an exposed situation, and as the fruit would mildew when the Diana Hamburg near by, was exempt, I concluded not to send it out. It is now numbered with the things that were.

One of the hybrids is still extant, but has not yet borne, owing either to winter killing of the fruit buds or too close pruning. This one is quite free from mildew of the foliage, ordinary seasons; but whether the fruit will prove so remains to be seen. Perhaps, if I had raised as many as twenty-five or fifty hybrids from the Clinton, I would have obtained some sufficiently free from mildew, both of foliage and fruit. My experience, however, inclines me to the opinion that it not as valuable for crossing with the foreign sorts as two varieties I afterwards used, one of which belongs to the same species and the other to one nearly allied. The first was originally brought from Maryland, and much resembles Clinton in size of cluster, color and flavor; but the berries are oblate, and the foliage differs in outline. It is an exceedinglyhardy variety, exempt from mildew of fruit and foliage. I have hybrids between it and Black Cluster, and other sorts, which, so far, have proved perfectly healthy and hardy. The hybrids sired by Black Cluster are now making their fourth season's growth; but are not bearing as I expected. The foliage refuses to mildew, and they are as healthy and hardy vines as can be desired. The other variety is about as large as Hartford in cluster and berry, and of very acid flavor. The leaf is smooth underneath, impregnable to mildew, and the wood the hardest grained of any variety I have ever pruned. I think it belongs to the same species as Oporto, and I doubt if a hardier variety exists. Whether it is a wild grape or a cultivated sort I do not know. I have been unable to identify it as any known or described sort, and am inclined to think it a nameless wild grape. I procured and crossed it for the Creveling, and the mistake may prove a lucky one, as the Creveling could hardly have produced varieties as free from mildew as are those from this wild sort. I have hybrids from seed of it, by Black Cluster, Black Hamburg, G. Frontignan and others, which for vigor, health of foliage, (*i. e.* exemption from mildew) and hardiness, appear to be all that can be desired. They are now making their fourth season's growth; but nearly all of them are without fruit, although they withstood the winter perfectly. I think they have failed to fruit on account of not making sufficient growth the first season of transplanting.

I have now planted for fruiting, some five hundred hybrid and crossbred and seedlings, from one to three years old. These are the products of six thousand crossed seeds, planted at different years from 1860 to '66. I ceased crossing last year, and it is doubtful if I again undertake the work, as it is likely to be unnecessary. It is true there is always room for improvement; but as the work seems to be attended with little or no compensation of the originator, (which is a necessity with me) however great the benefit to the country, the public must look to such *enthusiasts* as Dr. Wylie, and others (I am not as enthusiastic as I was) for the prosecution of the work.

The foreign varieties I have used in my various crosses are as follows: Black Cluster, Miller's Burgundy, Black Hamburgh, Muscat Hamburgh, Pope's Hamburgh, Black Prolific, so called—Golden Chasselas or Royal Muscadine, Chasselas Musque, Muscat Blanc Hative, Muscat Alexandria, Bowood Muscat, Cannon Hall, Syrian, White and Grizzly Frontignan. The native varieties crossed with them, and invariably made the seed parents, are Delaware, Isabella, Concord, Catawba, Northern Muscadine, Hartford, Diana, Clinton, Dartmouth—large, Black Fox, Logan, and the two wild grapes before mentioned Most of these were crossed with from three to six of the foreign sorts. I have, also, recrosses between the Diana Hamburgh, Hardy Chasselas, and other of my first hybrids, and Concord and Delaware, also crosses between native varieties; most of which are in their second year. These native varieties are Delaware, Concord, Adirondac, Catawba, Isabella, Rebecca.

I am not aware of leaving anyway untried whereby to secure thoroughly reliable as well as excellent grapes. It is my experience that it is useless to cross such varieties as Delaware, and Isabella, with the foreign sorts for the purpose of obtaining varieties as hardy as the *Concord*. I planted for fruiting, Spring of '66, upwards of a hundred hybrids between Delaware and the foreigners, which I destroyed in the Autumn on account of losing their leaves through mildew. In order to obtain the requisite hardiness it is necessary that one parent should be very hardy and free from mildew, when the other is liable to it, as is the case with the foreign varieties. When both parents are somewhat liable to mildew, and are natives of different species, the progeny may nevertheless be hardy, and free from mildew.

Such a result is due to *the effect of hybridization, which toughens the progeny.* I have had many proofs of the truth of this statement. Last summer I had hybrids between Delaware and Adirondac, which were perfectly free from mildew, while the parents in the same field, not far distant, were badly affected.

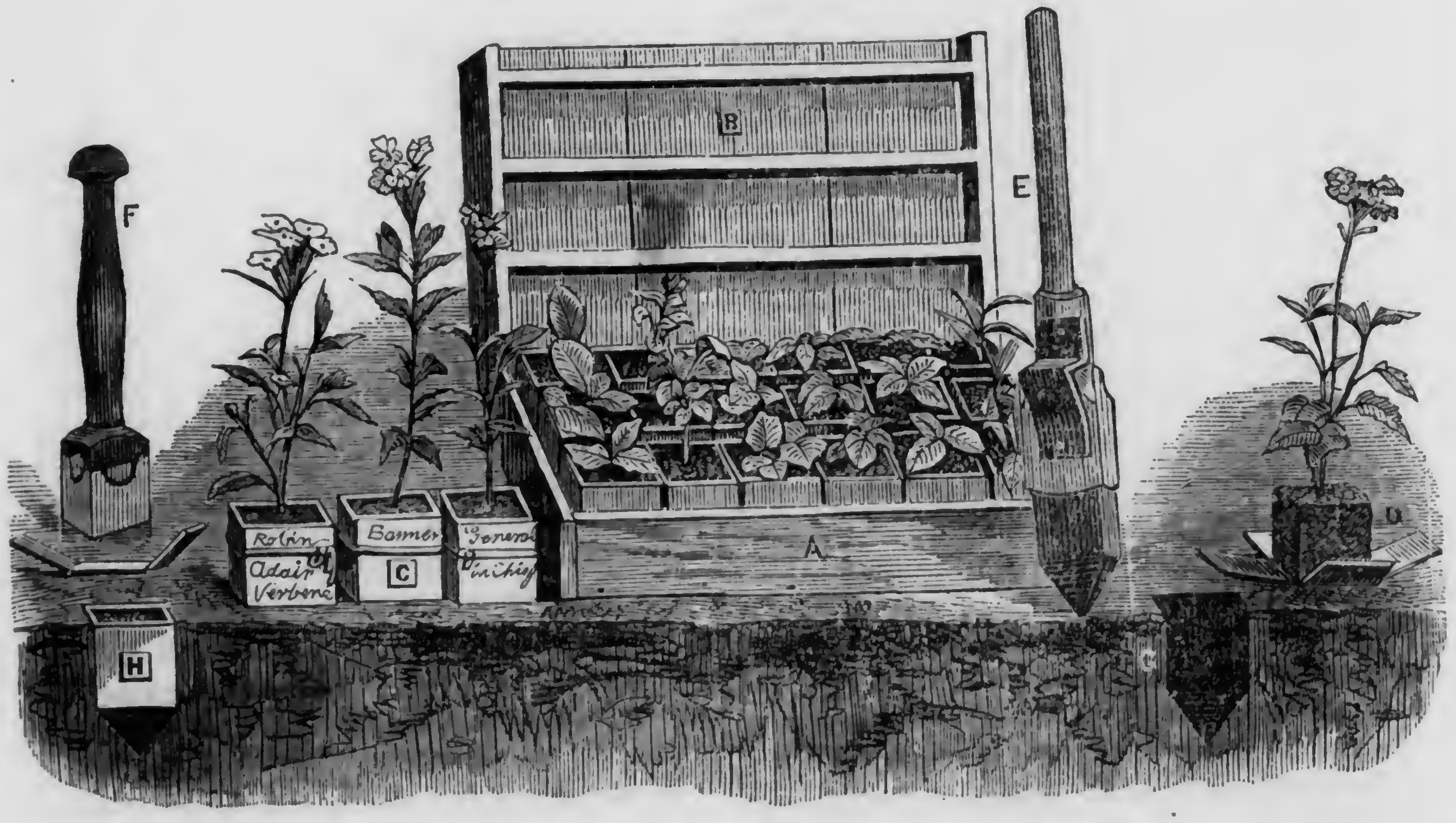
In reference to hybrids between native and foreign sorts, I have observed that there appears to be no rule for the constitution. For instance, the native constitution and resistance to mildew may belong to the hybrid having the foreign leaf; while the one having the leaf of the native parent *may mildew badly*, and vice versa.

Not more than half a dozen of my new hybrids will fruit this year. There is one from the Concord, by Black Hamburgh, that shows some fruit, and another from Concord, by Chasselas Musque.

My Diana Hamburgh vines are loaded down with fruit.

RYDER'S IMPROVED PLANT BOXES, CRATES, &C.

We give below a paper by our ingenious friend Ryder, of Chambersburg, and have had some illustrations made to accompany the paper. As a simple question between wood and pottery ware, the last has the advantage of growing plants best. The merits claimed for wood, that plants dry less than in earthenware, is really a bad point. The more plants dry, provided they are not allowed to suffer for want of water, the better they grow. On the other hand pots have many disadvantages, and on the whole this plan may have some merits; and although we are not over enthusiastic in its favor, should like to see it have a fair trial, hence we have pleasure in presenting it to our readers :



A represents a section for a crate, with plants growing.
B Section of an empty crate.
C Plants ready for transportation in single specimens.
D Showing position of ball with box open.
E Tool with which to make holes in the soil to receive veneers.
F Tool for setting veneer boxes in open ground, for layering Strawberry plants, &c.
H Showing shape of hole made by tool, with method of drainage.

"The boxes consist of two pieces of wood veneering, scored at two places, to form the angles of a square. By crossing and bending, the box is formed.

The crates are made to receive the boxes and hold them in position, with an arrangement for perfect drainage. The crates may be of various sizes, holding from 100 boxes, less according to sizes. 3 feet long and from 10 to 15 inches wide are the most convenient sized crates. The boxes being arranged the crates may be taken to the potting bench. The plants, seeds or cuttings put in the same as in pots, when they are ready to carry anywhere or to be placed in the propagating house, pits, &c. They fit close together thus economizing space; requires less frequent watering than pots, are always adjusted, setting level, are not constantly being tipped over.

Grapes from single eyes may be advantageously grown by this arrangement. The crates containing the boxes being placed on bottom heat, and when ready to remove to the open ground, they can be carried out and transplanted, involving less than half the cost and labor of pots. The same may be said for growing plants of cabbage, tomatoes, &c., from seed and all kinds of bedding out plants, verbenas, &c. They are ready when grown to send to market or ship to any part of the country. The crates may be employed for shipping (either whole or cut in sections.)

To pack or ship plants without the crates: The boxes being square they can be packed close in any kind of box, without securing the veneers, but for valuable plants it will be found best to tie them at the top with cotton yarn, or what is better, to use fine annealed wire, same as is used by nurserymen to fasten labels on trees, by twisting the ends together the boxes are drawn close together at top, and the ball held firm, so that it cannot slip out as is the case with pots. The names of the plants may also be written on the veneer boxes, taking the place of lables in packing and shipping not liable to be lost or misplaced.

Strawberry plants, &c., that have well filled the box with roots sufficient to hold the ball of earth together, will pack secure without the veneer, and being square they pack close and carry safely.

When strawberry runners are to be layered, the plants being cultivated in rows and the ground in mellow condition, we use the tool or dibble to make the impressions in the ground, using a second tool or plug a little smaller than the first and made square at the bottom to press the box flat down until they are even with the top of the ground, the soil slightly compressed outside, when the plug is withdrawn, and the box is ready to fill with soil, all of which is performed very rapidly. The point below the square provides for drainage—as my experiments amply illustrates.

In filing my claims for patent, I embrace the following :

I claim the above described mode of potting and packing plants, with cubical or rectangular balls of earth, or ball having parallel sides about the roots—substantially as set forth.

I also claim plant boxes made of veneers or other thin material, bent to form the corners of the box as set forth.

I claim packing plants in such manner that the balls of earth about their roots shall fit close against each other, and against the crate or large box, and thus require no packing to separate or hold such balls, as set forth.

I claim plant boxes made in sections and capable of being bound with cord or wire to hold the ball of earth together about the roots of the plant, or removed or opened from the ball of earth about the roots of the plant, substantially as set forth.

I also claim the plug or tool for setting the veneer boxes in the open ground, for layering strawberry plants, &c., as specified.

I also claim the above described crate for supporting or packing the veneer box."

[Since the above was in type, we have seen the article referred to. Mr. Ryder thinks where we compare the relative value of wood and earthenware, we misunderstand his point about the boxes requiring less water. Since seeing the boxes, and noting how very thin the veneering is, we do not think the wood very objectionable, and on the whole, think the invention valuable. For layering Strawberries, and thus saving time and pots, it is certainly *invaluable.*—Ed.]

EDITORIAL.

DRYING PEARS.

The great objection to Pear growing is that the fruit has to be marketed generally as soon as ripe; and if there is no market then, there are few ways of preserving them until there is. The apple and the Peach can be dried, the Grape can be made into wine, and the Currant into jelly, but the Pear is nothing if not sold at once.

To be sure there is not generally much difficulty in disposing of the fruit; and as the Pear when it generally begins to fruit, produces crops every year, it is seldom that there is any absolute loss. Yet if some means could be employed whereby the Pear would be equally valuable any day in the year, it would be a great boon to the Pear grower. Bottling and canning are practiced to some extent, but it is questionable whether in this way they will ever compete with Peaches.

There came into Philadelphia this year from Germany a cargo of "Pressed Pears," and they passed through the retail trade pretty well. How they were prepared we could not learn, and we are left to our ingenuity to find out. They were a small Pear of some of the Rousselet family, and had the skin taken off by some process other than by paring. Most probably this was done by scalding for a moment, and then dipping the fruit in cold water. They were squeezed flat, and packed in about two pound boxes like figs. Figs, however, are pressed after being put in boxes —but from the position of the fruit in the boxes these were dried and pressed before packing. The seed were fresh and bright, showing that no great heat had been employed in the drying. The pressure must have been very great, as the fruit was not more than quarter of an inch thick, and the cores were crushed, in many cases the seeds showing through the pulp. The Pears looked in fact as if they had been run through the rollers of an "Universal clothes wringer." Yet the Pear must have been somewhat dried before pressure or it would have crushed out at the edges, and moreover too much juice would have been lost.

The quality was very good,—not so sweet as the fig of course, and rather dryer and harder than the Apple, Peach, or Plum—but yet of a character to be tolerably popular. It may possibly be worth our friends' while, who are largely interested in Pear growing, to experiment a little in this line. If any of our readers know anything of the process, we should be very much obliged by the particulars.

THE HOLLYHOCK.

Seeing a most beautiful collection of improved varieties recently, reminded us how much rarer than it should be, is the Hollyhock cultivated. It has no fragrance to be sure, but neither has the Dahlia, and yet it has original claims to beauty and gaiety, and greater claims on the cultivator by its early blossoming. From July to September, when other cherished things languish by the heats and droughts of summer the Hollyhock is in its glory. It grows so easy, and is just the thing to mix with shrubs which have not yet grown thick enough to make a solid mass. Then to mix in about with Evergreens they are invaluable.

The great objection to Evergreens is, that while they make a place look warm and cheerful in winter, by their absence of gay flowers they give a heavy dullness in summer. But all this might be obviated by planting Hollyhocks about them. They will grow quite close to a tree—nearer than almost anything else, and yet flower well, growing so tall the flowers appear almost as if part of the Evergreens, and the effect from a little distance is very pretty indeed. The doublest flowers produce seed, and these sown as soon as ripe will, many of them, flower the following year.

THE BOTANIC GARDEN, ST. LOUIS, MO.

Mr. Henry Shaw is one of those liberal public spirited men who do so much honor to the United States. Some take pride in endowing and establishing one kind of institution, some others. Mr Shaw's taste leads him to botany, arboriculture, and gardening. His Botanic Garden and residence at Tower Grove is unequalled by anything of the kind in the United States, and indeed by few others in the world. A substantial and handsome stone wall, with an imposing arched entrance, encloses the garden proper.

This enclosed area is divided into suitable compartments, for the systematic arrangement of herbaceous and other plants of low growth. An architectural flower garden, sunk somewhat below the general level, and surrounded by a grass terrace formed an attractive point. There is also within this main enclosure a portion of ground which has been set apart for a Fruiticetum, or general collection of all hardy fruit-bearing trees; this will be of much interest, and has already been enriched by a considerable number of plants.

An Arboretum is also commenced, a field of thirty acres having been appropriated for the purpose, and a finer opportunity for displaying the relative beauties and peculiarities of trees could not be desired. The soil is rich prairie-loam, well adapted to tree growth, and the ground is sufficiently elevated and undulating to insure drainage; an injurious retention of moisture during winter months being the greatest attending evils of these rich soils.

The hot-house department is quite extensive, and the various collections are gradually being filled up. A new palm or tropical house on a magnificent scale was being constructed. The acacia and cactus families are so far the most extensive, although, of course, very far from being complete; there are also quite a number of palms and numerous miscellaneous plants, all in robust health, clean and kept in the finest condition. One of the hot-houses is built with a ridge and furrow roof, a style seldom adopted now on a single slope or *lean-to* house, although its only objection is probably that of cost, houses so built are as suitable for plant structures as any other.

A noticeable improvement is a large building of elegant proportions, which is to be devoted to the purpose of a Museum of Botany. The interior fittings are being finished in an elaborate manner. The ceiling of the principal room is enriched by emblematic frescoes, and the names of Linnæus, Jussieu, Endlicher, De Candolle, Brown, Hooker, Lindley, Gray and Engelman, are placed in conspicuous niches. The Herbarium already embraces forty thousand specimens, and is constantly receiving additions.

The whole of this beautiful place is thrown open freely to the public every day in the week, and the greatest pleasure of the liberal proprietor is to see how freely the public enjoy themselves, and to reflect on the immense power which such refined influences have on the general happiness of mankind. It is difficult indeed to form an estimate of the full value of such liberality. Thousands here have created in them the first germs of usefulness which operate in so many ways. In Botany already the whole world looks to St. Louis. The name of Engelman is honored wherever Botany thrives; and we believe we violate no confidence in saying, that the name of Shaw, Engelman, and the Botanic garden will go down into history together. A rather sad but yet interesing feature of the ground was the lots set apart for the future resting place of Mr. Shaw and Dr Engelman. It was sad to reflect that the noblest minds amongst humanity, whose whole lives are devoted to the happiness of their fellow men, and the development of science to which we all owe half the comforts and pleasures of the present age, received no more consideration from the hands of death than the meanest and most useless: yet it was comforting to feel that death does not destroy the work of such men. A man's identity after all is his character. This never dies. And though this lovely spot may contain the ashes of these men, they will live in the hearts of thousands for generations yet to come.

Mr. Shaw's benevolence has not rested with these gardens, which are mainly for the purpose of gardening and science. He has donated a large tract of very valuable land to the city for the purpose of a public park and drive, on condition that the city appropriate a large sum of money for its immediate improvement. We see since our return, by the St. Louis papers, that this has been accepted, and we may soon hear of St. Louis having a lovely spot to boast of, of which a New Yorker might be proud.

THE BEST TOMATO TRELLIS.

This is a matter frequently discussed by the amateur. Some mulch the ground with grass, and let the fruit rest on it. Some lay brush wood over the bed, and the plants trail on it. Others have a trellis made like an inverted V, over which the plants are neatly trained.

Now some of these have the advantage of producing greater crops than others, and those whose only idea of a good paying crop is quantity, or weight, will do well to follow them. But if one wants to have fruit of superior quality, there is nothing like training them over a wall or board fence, as recommended by our intelligent correspondent, L. B., last year. But it is not always convenient to have them in such places, and then the next best substitute will be very strong stakes three or four feet high, to which the plants must be securely tied. As stated by L. B., abundance of light is essential to the perfection of flavor in the tomato ; this the stakes will in a measure enable them to receive.

We do not say it would pay market men to attend to this, but we do not know but it would. In discussing varieties we are often told that this or that favorite is sought for in preference in the market. If this be really so, it shows that quality has some admirers who are willing to pay, and as Bunsby says if so, why then so—a good flavor will pay.

We should be glad to have the ideas of experienced market men. What does friend Samuel Allen say ?

STRAWBERRIES.

We have carefully watched our exchanges to see what new Strawberries have come up to the mark. To our disgust, we find such miserable old things as Albany, Triomphe de Gand, and Hovey's Seedling carrying off the praises and premiums pretty generally. We have invested our dimes freely in many new kinds the past few years, and are really anxious to have some gratification out of some of them.

But another year's experience has added little to our wisdom. Jucunda failing in some places, we yet hear well spoken of in many ; and Naomi is growing in grace and reputation.

SCRAPS AND QUERIES.

Early Potatoes. — A " *Young Reader*," *Brooklyn, New York*, ask us : " Tell me if you please, why one potato is earlier than another ? It seems to me so odd that two kinds set together the same day, one should be ready so long before the other. Father has given me a piece of garden for myself, and in growing the crops, I like to know the reason for all we do ?" [We suspect " father" has had something to do with sending us this question. Why it was sent to us we cannot imagine, except that some people believe the popular joke that Editors must know everything. But this one is a hard task. We had never given it reflection. We thought we would go and examine a lot of kinds in a growing state. We find the runners which produce the tubers on early ones are very short, instead of extending far through the soil, they save the time in making tubers. This after all only tells how early Potatoes are formed. Why they thus are so lazy, we cannot tell, and we should ourselves like to know more to tell our young friend.]

Writing for the Monthly.—*B.*, sends us some good notes, but remarks that our pages are always so well filled, he supposes we may not have use for his articles. We like this modesty. The best papers usually come from such writers. But we take the opportunity to say to our friend that we never have too much. When we have a crowd, we condense some of them ; or when we think it would be more seasonable we hold them over for a little while. Sometimes when we have much of fruits, or more of flowers, we hold over accordingly until one or the other fall back a little ; but we think we can say, in our long Editorial career, we have received but very few articles we did not feel obliged for to the writers. So friends be as modest as you please, but do not let your modesty keep your inkstand corked.

Fast growing Trees.—*B. P., Cleveland, O.*, wants the names of "6 fastest growing shade trees." It would depend in a great measure what the particular use was to be made of the trees, what we should recommend. For general purposes we would name Carolina Poplar, Silver Maple, Sycamore Maple, Larch though it does not give much *shade*, Paulownia and Weeping Willow. Most of these fast trees, however, like fast people, have little else to recommend them. For real beauty we would rather make up a rich soil, and plant Oaks, Horse Chestnuts, or other beautiful trees, which will make good " shade " in good time. We are writing this paragraph under the delightful shade of an English Oak, which has a stem 2 feet in circumference, and which no larger than a broom handle we planted eight years ago.

The Venus Fly-trap, Dionæa muscipula.—The notice of this curious plant in another column, by Mr. Canby will possess a high degree of interest for the most of our readers. The discoveries made by him will astonish many who are already in close intimacy with the secrets of nature. It will be a new lesson to our young friends to investigate closely—very little of the book of nature has yet been read, and very much of what has been made out is but half understood.

Birds.—Those who see no use in birds must have had a change of heart towards them this year. In many places there were no fruit for them to eat. They have had to eat insects or starve. They prefer beetles and flies to the caterpillar. The locusts have been a great treat to them.

Raspberries.—*R. S., Bethlehem, Pa.*, says, " Amongst some seedling Raspberries which I fruited last year was one of delicious flavor, and I hoped I had a prize, but this season the flavor is so inferior, the fruit is not worth eating. How is this variation to be accounted for ?

[By the condition of the plants. A raspberry varies in flavor in accordance with the health of the plant. A seedling is generally very healthy, in which condition the best flavored fruit are produced; after a few years the plant is reduced in health by barbarous systems of culture, or some other misfortune, and its quality deteriorates. Your plants probably were injured in the winter, or the soil is very poor, both frequent causes of ill flavored raspberries.]

Planting Osage Orange Hedges.—*R. S., Lewisville, Prince George Co., Md.*—In planting an osage orange hedge, had I better set them in fall or spring ?

[Set them in the fall most decidedly ; but you have to take some precautions, unneccessary in spring planting. Plants, like fall made cuttings, push much stronger the next year than spring set plants, besides the advantage of getting this work out of the way before the hurry of spring.

But if the plants are set in fall, like spring plants are, they get drawn out by frost; you have therefore to set the plants slanting, and two inches *beneath the surface.* By the spring they will be just about the top, and even if under the ground a little will push through beautifully. In this way you can plant until hard frost stops you.]

Verbenas from S. H. Purple.—We have received specimens of 12 varieties of verbenas sent to us by S. H. Purple, Columbia, Penna. They are all very good, equal to any we have seen ; we should say they were good growers by the vigorous appearance of the shoots.

Rose Mareschal Neil—*L. C. L., Nashville, Tenn.*, enquires, "Is not the " Mareschal Neil," represented as a Tea rose a year or two ago, and now admitted to belong to the Noisette class, identical with Isabella Gray ? When was the Isabella Gray originated, and by whom?

[It is hard sometimes to tell what class a rose belongs to, as they often seem to run into one another. Devoniensis for instance, usually so delicate a grower, will at times turn into a vigorous climber, as much like a noisette as possible. We should be guided rather by the fragrance and disposition to bloom early, in deciding Mareschal Neil to be a Tea rose. Noisette roses usually do not flower freely until after mid-summer, and have a musky smell. Isabella Gray was raised at Charleston, South Carolina, and Mareschal Neil is a seedling from it, raised in France.]

Liliums.—*W. F. B., Hammonton, N. J.*—" Will you please state in the next *Monthly* whether Lilium giganteum, auratum, and Brownii are hardy in this latitude, and the kind of treatment required for each, also what to do with *small* bulbs of auratum started in pots in spring."

[Quite hardy. Make a bed of good lily soil, which is a rich sandy one, and plant out the small bulbs in September or October.]

Hot Water for Hotbeds.—*A. S.* inquires : " whether hot-beds can be heated with hot water. Has any reader of the *Monthly* had any experience with it ? What size pipe is used, and what boiler is considered best ?"

The Florida Lily Again.—A very much to be envied mortal is Meehan, who can receive by mail, such missives as bulbs of rare native plants from the sunny South in the " Florida River Lily," which I cannot agree with him in being *Amaryllis longifolia*, if I comprehend the purport of the note on page 214 of his last issue.

A fine vigorous plant of said Amaryllis having been presented me by Mrs. S. Joyce, of Medford, Mass., one of two brought] two or three years ago from some Southern garden, and unknown to

Boston florists, induced me to institute a search for its patronymic, which after inspecting the rather poor figure in the *Botanical Magazine*, XVIII, 661, and not being able to examine the *Botanical Register*, in two figures, ended in Redoute's beautiful plate of his Liliaceæ, Vol. 6, 347, where I was satisfied.

Whoever has seen the Onion plant (*Ornithogalum alliaceum*) may get some idea of the *longifoliar* greenery of the Amaryllis ; but here the comparison ends, the singularity, seeming reticulated cell arrangement of the leaf, and the large fine fragrant flowers, as well as the thickened covering of the bulb and its long reddish tinted neck, being quite diverse. It is an East Indian tropical plant, and according to the structure of the *seed*, is probably the Crinum longifolium of Herbert, the only available indication I have at present at hand, not having seen the flower or examined its structure.

One of the "three varieties" of the Florida River lily, seems to point in its description to the Pancratium (*Hymenocallis*) rotatum, of Kerr, which I once saw in regal glory, grown in a large tub of peat and sand, and with numerous blossoms, flowering freely, and brought from the South, where, I was informed, the individual plant was found with others growing spontaneously. The "crown" of this section of lilies, and by which they are allied to the Narcissus, is of a most delicate pure white, and tender tissue, expanding between the bars of the stamens into a torn or fringe cup, and reminding one of the Marvel of Peru flower in structural form. The "large fleshy head" of the three, indicate the *seed*, and shows a close affinity to each other; but in that way the six petals of the perinauth of a lily can be "imbricated," mentioned in the note as exhibited in the last one cited, I am at loss to conceive.

If your *Volusia* correspondent has any more to spare, and to "send by mail," they would be highly acceptable to your present correspondent. —JOHN L. RUSSELL, *Prof. Botany, Mass. Hort. Society.*

[It looks like as if we are to get into trouble about this Lily business. *Amaryllis longifolium* of old authors, we suppose to be originally a cape plant, which has become naturalized in other parts of the world. We have had bulbs before from the South, and have one now growing from the vicinity of New Orleans, which seems identical with what we have known from youth as *Amaryllis longifolium*, and which certainly goes under that name. We supposed it had become naturalized along river bottoms near large Southern towns. These Florida roots seem so exactly like all that we have had before, that without any regard to our Volusia correspondent's *description*, we concluded them to be the plant we named. We have never seen the plant flower, though knowing it in cultivation for 30 years, and it is just possible that we have never had the true Amaryllis longifolium at all.]

FRUIT PROSPECTS AT CLEVELAND, OHIO.—*Mr. Batcham* writes : Our present prospects for grape crops are very good, no lack of fruit, and no signs of disease in good locations, and fair crop of apples and peaches.

NEW AND RARE FRUITS.

ROSEMARY RUSSET APPLE.—This is "one of those fruits, of which there are many, that have never acquired the notoriety which appears to be necessary now-a-days, before anything good is appreciated. What was the origin of this admirable Apple we have never been able to ascertain, neither can we discover when it became known. The earliest notice of it is by Ronalds, who published a figure and short description of it in 1831, and who had cultivated it for many years previously. As a dessert Apple it is one of the very best. Its size, form, and color, strongly recommend it, and it only requires to be known to find a place in all good gardens where only the best fruits are grown. The following description from the 'British Pomology,' will convey all the information we possess respecting it:—

" 'Fruit below medium size, ovate, broadest at the base and narrowing obtusely towards the apex, a good deal of the shape of a Scarlet Nonpareil. Skin yellow, tinged with green on the shaded side; but flushed with faint red on the

side exposed to the sun, and covered with thin pale brown russet, particularly the eye and the stalk. Eye small and closed, woody, with erect segments, set in a narrow, round, and puckered basin. Stalk very long, inserted in a round, and wide cavity. Flesh yellowish, crisp, tender, very juicy, brisk, and sugary, and charged with a peculiarly rich and highly aromatic flavor.

" 'A most delicious and valuable dessert Apple of the very first quality; it is in use from December till February.' "—London *Florist and Pomologist.*

LOUIS PHILIPPE CHERRY—*Mr. Elliott says in Journal of Horticulture* : "As the cherry fruiting season is close at hand, I desire especially to call attention to the Louis Philippe as one of the varieties suited, as well as Early May, to Western culture, and as much superior to it in quality as a table fruit as Rockport or Elton is superior to the old American Heart. I suppose my friend "Rural," M. L. Dunlap, will dissent; but while I give him credit for a great amount of knowledge, I believe the knowledge of this cherry is one little item which has not yet reached his brain, or he in honesty and candor and love of public good, would have advanced its cultivation. My first experience of this cherry was in 1852, and when I wrote my book it had not developed its character in tree to form more than a bush, nor in fruit to exhibit aught but a hard cherry which enabled one only to speak of it as valuable, like all sour cherries, "South and West." As I now view it, after seventeen years of observation, I have no hesitation in awarding it a first place in all collections East, West or South."

SWITZERLAND PEACH.—One of our readers in WARREN CO., O., writes of a new peach under the name of Switzerland, which he regards as superior. He says that "were he to plant fifty acres in peaches, at least one-third should be of this variety, as, on account of size and beauty, they will outsell all others in market, either for table use or canning purposes." He describes this peach as large, white flesh, free stone, blood red around the stone and some red veins through the flesh.—*Iowa Homestead.*

NEW AND RARE PLANTS.

NEW HYBRIDS OF COLEUS.—Amongst the subjects which have been successfully brought under the influence of the cross-breeder at the Chiswick Garden, a prominent place must be given to the genus Coleus, on which M. Bause has practiced with results which are in every way satisfactory. A considerable number of hybrid novelties of this family has been raised, and a selection from these was exhibited on Tuesday last at the meeting of the Floral Committee at South Kensington, where the plants attracted much attention. The materials operated on in this case were the following :—C. Verschaffeltii was throughout the seed bearing parent. This was fertilized by C. Veitchii, by C. Gibsoni, and C. Blumei, and in the offspring there is abundant evidence that true crosses have been effected. The novel forms which have been produced range in two series, the one having plane crenated leaves, as in C. Veitchii, and the other having inciso-dentate frilled leaves, as in C. Verschaffeltii, so that some follow in this respect the mother and some the father plant.—*Gardener's Chronicle.*

ANTHURIUM SCHERZERIANUM, is a native of Guatemala and Costa Rica. It was introduced in 1862 by M. Wendland to the Royal Gardens of Hanover, and from this source, we believe, was received by Mr. Veitch, of Chelsea, by whom it was first exhibited in this country, and by whom the wonderfully improved plants just adverted to were also produced. It is a dwarf-habited herbaceous plant, having a short erect stem, on which the petiolate, elongate-oblong, acuminate, leathery leaves are closely backed, and from which roots are protruded between the leafstalks. From between the leaves spring up the flower-stalks, which are colored red, and terminated by an oblong, ovate, rich scarlet spathe, which forms the most attractive part of the inflorescence, and is always bent back against the stalk. The spadix, which is orange-colored, is quite exposed, and vermiform. The plant is easily cultivated in the stove.—*Florist and Pomologist.*

New Variegated Geraniums for 1868 :

Egyptian Queen (Morris), *Golden Bronze Zone.*—This variety, was awarded the First Prize at the Royal Horticultural Society's Show at South Kensington, in the autumn of 1867. Description : Darkest bronze zone yet seen, on bright golden yellow ground, leaves of extraordinary substance, consequently resisting sun and rain; form of leaf round, and surface flat; habit dwarf, bushy, and very hardy. Figured in "Floral Magazine" for January, 1868.

Goliah (Morris), *Tricolor.*—This offers a desiderata long wanted in tricolors, viz., a strong vigorous habit, fit either for conservatory pillar work, for greenhouse pot culture, or for out-door planting, with a thick fleshy foliage, and habit as hardy as old Trentham Scarlet, or Tom Thumb, and as free in growth. It is of fine circular form of foliage, and has a deep golden yellow margin, broad zone of chocolate, flaked with brilliant scarlet, and bright green centre, bloom intense dark scarlet.

Dr. Primrose (Morris).—An intermediate tint between the deep golden variegated varieties and the pure white variegations, of a peculiarly beautiful primrose hue, making a most distinct and pleasing contrast with other favorite foliage bedding plants.

Snowdrop (Goode).—The purest white margin, the freest grower, the best habit of any yet seen. —*Gardener's Chronicle.*

Begonia Boliviensis (Bolivian Begonia).—*Nat. ord.*, Begoniaceæ. *Linn.*, Monæcia Polyandria. Originally discovered by Weddell, in the Cordilleras of Bolivia, and exhibited this summer by Messrs Veitch, both at Paris and South Kensington, where it attracted general attention. Flowers drooping, 2 inches in length, bright scarlet.—*Bot. Magazine.*

Cestrum elegans (Purple Habrothamnus).—*Nat. ord.*, Solanaceæ. *Linn.*, Pentandria Monogynia. Native of Mexico. Well known under the name of Habrothamnus elegans, as one of the best of greenhouse climbing shrubs. Flowers tubular an inch in length, purplish red. Berries globular, from half to three quarters of an inch in diameter, deep reddish purple, in magnificent Grape-like clusters. Fruited by Messrs. E. G. Henderson & Son.—*Bot. Magazine.*

Agave xylonacantha (Woody-thorned Agave).—*Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia. Native of Real del Monte, Mexico. A stemless species, with thick, succulent, glaucous green leaves, from 2 to 3 feet long, and from 3 to 5 inches broad, spreading all around, and having white, woody spines. Scape 9 or 10 feet high ; flowers greenish yellow, in a raceme 2 or 4 feet in length.—*Bot. Magazine.*

DOMESTIC INTELLIGENCE.

Fruit in California.—Our Fruit Market during the past week has been the centre of attraction for all, from the Merchant and his lady down to the urchins who prowl about the streets, every one is attracted by the magnificent display of Cherries and Strawberries, which without exception, for quantity and quality at this period of the season surpasses every other Market in the world; and it seems if ten times the quantity was sent to San Francisco, it would be disposed of at fair remunerative prices. We all know that Strawberries are the most healthy of fruits, they can be eaten with impunity, and to indulge freely in them at this season of the year will save many from visiting the Doctor during the year. Nature has provided for us this most invaluable and delicious medicine. They are now coming within the reach of all, and honest Doctors say, eat to your hearts content.

Jucunda has taken the lead this week among Stawberries, and are bringing thirty cents a pound, whereas, others are bringing twelve to fifteen cents per pound. The finest Cherries this week have been Black Tartarians and Governor Wood. Cherry Currants are coming in freely ; it appears to be the king of its class. Apricots have made their appearance, and bringing the modest price of a dollar and a half per pound.

The best of all other fruits are bringing first class prices.—*California Farmer*

How to Raise Plums.—There is a secret about plum raising.—We have discovered it in travelling over the country. We never visited a large plum orchard in our life that we did not find plenty of the fruit. And we never visited any place with eight or ten trees and found a good crop

of this fruit. Now these facts set us to thinking; and the result of our thoughts is this : that it is very easy to have all the plums you want to eat and sell. The secret connected with plum raising is to plant plenty of trees, so as to give fruit to the curculio and to yourself also. If you will plant fifty or a hundred or two hundred trees, you will have fruit enough for everybody. Every such orchard that we ever visited had plenty of ripe fruit. Some even complained that the curculio did not thin out the fruit enough—that the trees were overloaded.

So we say to our readers, if you plant plums at all, plant fifty or one hundred trees—then you will be sure to have all the fruit you want. It sells for five to ten dollars a bushel in the St. Louis market, and is one of the most profitable crops raised.—*Rural World.*

Wine Items.—Alum is largely used in perfecting the "best brands" of clarets in Europe.

A London journal called the the *Revival*, prints the following advertisement : "Gardener (head). An energetic young man, age 26, is desirous of obtaining a situation as above. Has been bred to the profession. Thoroughly understands forcing, bedding, laying out and the different branches connected. [Is a laborer in the Lord's Vineyard.] Testimonials, both professional and Christian, will bear the strictest investigation. Address———, &c.

Mr. Tucker makes the following statement as to the manner of converting the grape into wine, at Cincinnati, Ohio :

"The process of wine-making has been so often described that a good outline must here suffice. The first item is *stemming;* a cask is used for this purpose, having a removable head, perforated with holes an inch in diameter, beveled to a diameter of two inches on the under side. The clusters are placed on this head, and the berries worked through, leaving the stems behind. The fruit is then crushed and transferred to the press as quickly as possible—the least delay and exposure to air being essential with the Catawba, and, as I understood, with only light-colored varieties here tested, as a general rule. The crusher is like a large coffee mill, and breaks the berries without cracking the seeds. The press is a wooden one, worked by a screw, with a wheel and pinion attachment to increase the power. The must flows through a strainer into the receiving tub. from which it is at once taken to the cask, where it passes through its first fermentation. The Longworth Wine House can express from fifteen hundred to two thousand gallons daily.

The casks containing the must are filled to within say four inches of the top and closed with a bung containing a bent tube, the outer end of which stands in a vessel of water, so that the the gas is free to escape without any admission of the outer air. Here fermentation takes place, and though its most violent stages are passed through in a fortnight or three weeks, the casks remain unclosed until December, or for two or three months after pressing, when they are filled to their entire capacity with wine of the same vintage and closed tightly. It is needless to say that the casks, and indeed every part of the apparatus are cleansed before use, and kept scrupulously clean throughout.

We extract, for the benefit of our Florida readers, the following from Dr. Gaston's book, "Hunting a Home in Brazil."

"It has been a matter of consideration with me, whether growing the Orange for the purpose of making Wine and Brandy, might not become profitable. That a good article of each can be produced, has already been satisfactorily proved, and there is a modification of the wine, known by the name of Ooracoa, which is very much prized. This name implies that it is adapted to cheer the heart, and it is considered a great delicacy. I have tasted a specimen of the ordinary wine of the Orange, and thought it corresponded with the Sherry wine, which is certainly one of the best wines that is imported to the United States."

Osage Hedges.—*W. H. Mann* says:—"Though a good hedge may be grown by using any number of plants, from 16 to 50 per rod, a long series of experiments in hedging, in which the plants have been set from four to sixteen inches apart, have convinced me that about 8 inches apart, or twenty-five plants to the rod, is the desired distance at which to set them in order to secure the most reliable fence. Prof. J. B. Turner recommends from 12 to 16 thousand plants per mile."

Columbia Peach.—This unique variety is generally a little in advance of Crawford's Late. It reproduces itself from the seed with considerable exactness. It is one of our finest sorts, when well ripened; but being one of the sorts with reniform glands, it does not ripen well the heavy crops that it sets. Well thinned, its size, rich color, and luscious flavor, are hard to surpass. I am growing this a good deal as a seedling, and find that with some little variations in color, and time of ripening, that are hardly noticeable, the tree continually produce Columbias. This variety was described fifty years ago by Coxe, but was introduced here, under the name of "Georgia Seedling," from the South. It is described by Berckmans in his catalogue as "buttery, melting, and exceedingly rich. Ripe about July 20th."—W. FLAGG in *Am. Journal of Horticulture.*

HONEY LOCUST AS A HEDGE PLANT.—Honey Locust will make the best hedge in some localities. It is more thorny than any other shrub; it grows very fast, and is not troubled with the borer, as the common locust; it grows very bushy, and will bear cropping well, and stock will not browse it much.

The seed will not grow, unless it is well soaked before it is planted. The only way to soak it is to turn boiling water on it, and then keep it hot for one hour, then all of the seed that is turned white and appears soft is ready to plant. Some of the seed will require hot water to be turned on the second time.

The common locust is good for nothing for fence; it grows too rampant, and the roots run all over the adjoining fields; besides, the borer will kill them all in three or four years.—*Western Rural.*

THE FRUIT CROP WEST.—The scarcity of apples over the West is so general as to lead us to conclude that, if we get any next fall and winter, they will have to be bought as far east as New-York certainly. The peach crop continues to promise abundantly, and so of the grape crop. There will be few pears, and these look as if the fruit would be badly disfigured by knotting.—*Country Gentleman.*

STRAWBERRY MANAGEMENT.—Mr. G. H. Baker, of South Pass, (Cobden), produced 253 bushels of the Wilson sent to market from a single acre, by simply running a narrow one horse plow in furrows three feet apart, cutting off the weeds with a scythe, and giving him a clear profit of some 1509 dollars for the one acre.

JUCUNDA TRIUMPHANT.—It is not a little amusing to notice how reluctantly old diggers have assented to the claims of Jucunda as the most profitable strawberry. This was especially noticeable at Cincinnati, the home of Longworth and McAvoy and the *hub* of all strawberry knowledge a dozen years ago; though visitors have for years seen that the present fruit growers of that market were falling behind the times. At the stawberry Exhibition of the Cin. Horticultural Society the past month, the premium for the best dish, and also that for the largest or heaviest five berries, were both awarded for samples of the Jucunda, grown by Col. Anderson, the President of the Society, and a nephew of Mr. Longworth; and the awarding committee in their report paid the highest compliment to the Jucunda, and expressed regrets at the absence of their old favorite varieties, and also that the Wilson had so generally monopolized the affections of the cultivators. An intelligent German, sent by the Society as a delegate to Knox's Show, was so convinced of the superiority of the Jucunda, that he engaged a large stock of plants for next fall's planting, and on his return made a report, giving his conviction that the Jucunda is the best of all known varieties for market purposes.—*Ohio Farmer.*

PEACHES FOR SOUTH ILLINOIS.—The four most approved varieties for market-peaches with us are Troth's Early, Large Early York, Oldmixon Free, and Smock. These can hardly be thrown out from any list, so satisfactory are they in vigor of tree, hardiness of buds, and productiveness of fruit.

The following list I would recommend as desirable in Southern Illinois :—

1. Hale's Early. 2. Troth's Early. 3. Large. Early York. 4. Morris Red Rareripe; Crawford's Early. 5. Yellow Rareripe. 6. Oldmixon Free. 7. Reeve's Favorite. 8. Stump the World; Columbia. 9. Late Rareripe; Crawford's Late. 10. Ward's Late Free. 11. Smock; Delaware White. 12. Heath Cling.—W. C. FLAGG in *Am. Journal of Horticulture.*

VALUE OF SUPERIOR FRUIT.—It is in this matter of *quality* of fruit, including size, and beauty, and perfection of handling, that Mr. Knox has thus far exceeded all other extensive growers, and is likely to do so for some years to come; and yet he is of all men the most liberal in the way of making known his methods and improvements to others, as is done at these an-

nual gatherings at his grounds, and by means of the public press, &c.—*Ohio Farmer.*

RAFINESQUE.—In answer to a correspondent, the Philadelphia *Sunday Dispatch* says: "Rafinesque the celebrated botanist, resided at one time on the south side of Vine street above Fifth, in a house that is still standing, and which is peculiar upon account of the entrance by high steps, was a scientific man, and in botany he was one of the most accomplished professors of his time. He wrote many botanical works. He was, about 1837, a little, dried, "muffy" looking old man, resembling an antiquated Frenchman. According to his birth place he might have been called a Turk, for he was born in Constantinople. His father, however, was a French merchant, trading between Marseilles and the Levant, and the son was born in Turkey while the parent was there on business, together with his family. The young philosopher was taken to Marseilles when seven years old, and afterward to Italy. He came to America in 1804, collected a large number of botanical specimens, and in 1805 went back to Italy, where he remained ten years, returning to the United States in 1815. He was wrecked upon the coast of Long Island, and lost his fortune, his interest in the cargo, his collections and the results of his labor for twenty years, his drawings, books, manuscripts and clothes. In fact he was placed on shore without a penny, and without friends here or elsewhere. But for this misfortune Rafinesque might, by his means and talent, have commanded a position of esteem and influence. As it was, he became one of the most neglected among God's creatures —a poor philosopher."

FOREIGN INTELLIGENCE.

FRUIT IN GERMANY.—I believe this fruit (in German, *zwetchen*,) has been introduced into the United States, but very little attention seems to be paid to its culture. Here it is a steady and prolific bearer, and is never attacked by the curculio. It thrives in the poorest and roughest soil, the trunks, which are buried three feet deep in the stone and gravel of a macadamized highway, being quite equal to those which grow in garden mould. No plum is so wholesome as this; the flesh is firm, and rather dry, but very palatable.

It covers Germany, from the Lake of Constance to the Baltic, and therefore could not fail to succeed in our Northern States.

The fruit trees along the highways are generally planted by the village municipalities, to whom the fruits belong. The produce is farmed out every year, and often brings a considerable return into the village treasury. It appears to be as secure from depredation as the private orchards.

The children, of course, look out for windfalls, and no doubt, pilfer sometimes; but a systematic practice of robbery, like that to which so many of fruit growers are exposed, very rarely occur. The wild berries of the Government forests are free to everybody. There are, however, tracts of many a league without forest, and where the only fruit to be seen is that along the highways. In this climate, the plum, cherry and gooseberry are superior to those of warmer latitudes. Every land seems to believe in its own apples, but I must say that I find none anywhere in Europe equal in size and flavor to those of Western New York, Michigan or Illinois.

Peaches, there, only succeed as espaliers, and, even when they ripen, have a faint, weak flavor.

The pears are inferior to those of France, probably less on account of climate than deficiency of culture. The range of fruit is therefore rather limited, but there is a large supply of the prevalent kinds. Large as it is, it never exceeds the demand—which is a lesson for us.

Our consumption of fruit will always keep pace with the production.—BAYARD TAYLOR, *in N. Y. Tribune.*

CLOTH FROM HOP VINES.—Mr. Van der Schelden, of Ghent, in Belgium, has discovered that the hop contains a first-class textile material, and has invented a process by which the fibres of the vine can be used for cloth without, in the least, interfering with the crop of hops. The following is said to be Mr. Van der Schelden's process of separating the fibres:

When the hop blossoms have been gathered, the stems are cut, put up in packets, and steeped like hemp. This maceration is the most delicate process, since if it be not made with all due precision, it is very difficult to separate the threads of the bark from the woody substance. When the stalks have been well steeped, they are dried in the sunshine, beaten like hemp with a beetle, and then the threads come off easily. These are carded and worked by the ordinary process, and a very strong cloth is obtained. The thickest stalks, also, yield the material for several kinds of rope.

LAXTON'S SUPREME PEA.—The Fruit and Vegetable Committee of the Royal Horticultural Society has now for two seasons reported in general terms its high opinion of the merits of Mr. Thomas Laxton's new Early Peas. I have just had an opportuity of inspecting a few of these new Peas, and among them of one named Supreme, a variety raised from Laxton's Prolific, crossed with Little Gem. In the dry state the seed is in color of a dark olive green, and in shape slightly indented. The plant grows about 3½ feet in height, and is quite as early as Daniel O'Rourke—a great advantage in a Pea of such high class quality. I was so struck with the fine character of Supreme that I obtained a few pods for your inspection. They are somewhat advanced in age, as the crop was fast becoming ready for harvesting, but they are a fair sample of the bulk, and were picked by myself in order that an average test should be supplied to you. The piece from which the pods were obtained is in extent 2¼ acres, and so even and true to the character in the growth that there is, in this variety, no trace of the mixed character noticeable in some of the others which I have seen growing at Chiswick. It is unquestionably a first-class early Pea, and will be as great an acquisition as any Pea of modern introduction. *Richard Dean, Ealing, W.* [A grand Pea: the sample sent was remarkably fine—large full pods, with 10 large Peas in each, and almost as uniform in character as if from a mould. Though rather old, they boiled quite green, and were tender and good.—EDS. *Gardener's Chronicle.*]

HISTORY OF THE CHRYSANTHEMUM.—The Chinese Chrysanthemum flowered for the first time in England at Mr. Colville's Nursery, King's Road, Chelsea, in November, 1795, in which year the name Chrysanthemum (Golden Flower), was first given to it by Linnæus, who distinguished two species, calling the one with a small flower, indicum; and the other with a large flower, sinense. But after his time a diversity of opinions arose among the botanists as to the proper name, some of them saying the plant belonged to the Anthemis grandiflora, Anthemis artemisiæfolia, and Anthemis stipulacea (Camomiles). Modern English writers call it Chrysanthemum, with the exception of Sweet, who considers it a species of Pyrethrum, or Feverfew, and places it under the head of Dendrathema (shrubby kinds). These differences of opinion arise from the small membraneous scales, resembling chaff, found on the receptacle of the flowers of the Chinese Chrysanthemum at the base of the florets, such being characteristic of the genus Anthemis, while the receptacle of the true genus Chrysanthemum is without chaff-like scales. Nevertheless, they are in my opinion both the same genus.

In the "Horticultural Society's Transactions" of 1831, a history of the Chrysanthemum is given by Mr. Sabine, who says they were cultivated in Holland, and described by the celebrated Breynius as far back as 1688. He calls it Matricaria japonica, and speaks of six varieties. They appear to have been lost, as no gardener in 1821 knew anything of them.

In January, 1826, Mr. Sabine, again referring to the Chrysanthemum, says, speaking of the rapid progress the flower had made in this country in a few years, that the shows of the flower at the Society's Gardens in 1824 and 1825, had been acknowledged by its admirers to be, taking them as a mass, the most splendid and gorgeous exhibitions ever seen even in the gayest time of the year. The show consisted of seven hundred pot plants. They began to bloom in October, and continued till December, with now and then changing a few of them for later blooming ones, thus enlivening the garden at a period when there was nothing else to attract attention.

Many of these were collected by Mr. Parks in China and Bengal during 1821, and some of them were sent home by the Society's gardener, Mr. John Potts.

The whole of the varieties in the garden at this period were forty-eight. These were introduced into the gardens of England at the following times—one came from China to France in 1789, and brought to Kew from Paris in 1790; seven from Sir Abraham Hume, between 1798 and 1808; one from Mr. Evans, in 1802; one by Capt. Rawes, in 1816; one by Capt. Larkins, in 1817 one by Messrs. Brookes, in 1819; one by Mr.

Reeves, in 1824; two from whom not known; four are English sports; and the remainder were sent from China by the society's agent up to 1824.

Mr. Colville, a nurseryman at Chelsea, sent to the Society a sport in 1822, of a pale Pink, grown from the changeable Buff; colored plates of several varieties of which were shown—viz., the Early Blush, Parks's Small Yellow, Blush Ranunculus, the Tasselled Yellow, the Changeable Buff, the Curled Blush, the Tasselled Lilac, and Two-colored Red, the Pale Buff, the Windsor Small Yellow, the Clustered Yellow, the Clustered Pink, the Semi-double Orange, the Starry Purple, the Golden Lotus, the Brown Purple the Two-colored Incurved, the Late Quilled Yellow, Waratah, the Yellow Indian, the Double White Indian, the Small Yellow, the Quilled Pink, the Semi-double Pink, the Semi-double Quilled Orange, and the Pale Purple.

Now for a few words regarding the Pompon, or Chrysanthemum indicum flore pleno. About the year 1845, Mr. Fortune brought to the Society's gardens from Chusan a small semi-double, reddish, or light brown Chrysanthemum, which he called the Chusan Daisy, on account of finding it at Chusan. The Society propagated it, and distributed it among its members. Thence it was carried to France, and came into the hands of M. Lebois, of Paris, an ardent lover of Chrysanthemum. He seeded it, the climate being better adapted for ripening the seed than that of this country. From the seed thus obtained he raised a great many beautiful varieties of various colors, some of them exquisitely formed, and perfectly symmetrical, and, consequently, the majority of our present collections came from this source, having been obtained by Mr. Salter, of Hammersmith. Still, I find colored plates of beautiful Pompons in the Society's "Transactions," as far back as February, 1821.

The French gave it the name of Pompon, on account of its small compact bloom, resembling the tuft or pompon on a soldier's cap.

[*Cottage Gardener.*

HOW TO USE AN AXE.—Mark Topley, in his "Home in the Wilderness," thus discourseth: "To use perfectly the American wedge-shaped axe (and here let me say that it is the only axe for felling timber and doing everything with, which is worth one straw), requires no ordinary degree of skill and practice.

"Strength of course, has something to do with it, still a man of only moderate muscular power would beat a giant into being ashamed of himself, if the weaker man did, and the stronger man did not, know how to wield an axe.

The axe I prefer for all ordinary purposes ought to weigh about 8 lb., and it should be carefully mounted or 'hung,' as the term is, on a springy, rightly curved hickory handle. * * *

Let us suppose you are going to fell your first tree: be careful to discover how the tree leans, and always choose that side towards which it inclines to begin on; by doing this you avoid the risk of falling the tree on yourself. Stand off from the trunk, so that the edge of your axe blade can touch the centre of it, whilst both your hands are grasping the handle before the knob at the end of it, purposely made to prevent it from slipping out of the grasp in the act of chopping.

Fix your eye on a spot about 3 feet from the ground on the tree trunk, plant your feet firmly, look carefully behind you, to make sure that there are no small twigs or branches to intercept the axe; then holding the handle by the extreme end, not too firmly, or it will jar your wrists, and whirling the axe at arm's length round your head, bring it obliquely down upon the spot you have fixed your eye on. If you bring the edge down on the proper slant, the blade should be nearly buried in the bark and timbers; if you do not it will "glance," and then look out for your legs. Repeat this cut if you can; an axe-man would, twice or three times following, in the same place. Should the tree be, for example, 4 feet in diameter, chop in the next cut you make 3 feet lower down than where you made the first cut, but, this time, horizontally, always bringing the axe round at arm's length. This will give you the 'right sized chip,' to use a lumberer's phrase, or, what he means, in other words, is, that the 3-feet notch will enable the chopper to make the wedge end of the tree break in the centre of the stump; if you took a smaller notch, as nine out of ten inexperienced men would do, you would find your axe jammed before you could chop half way through the trunk; hence the length of the chop is always in proportion to the girth or diameter of the tree to be felled. Cut half way through the tree, always keeping the lower surface horizontal and smooth, as if planed; then change and begin on the opposite side to that on which you have been chopping, precisely in the same way as you began the other cut; when you are nearly through, the tree will crack off, and of course fall in the direction to which it leaned, that is away from you."

HORTICULTURAL NOTICES.

PENNA. HORTICULTURAL SOCIETY.

At the Rose show of the Pennsylvania Horticultural Society, we believe the premium was awarded to R. Buist. He had the best Roses, but as the premiums were offered for 24 Hybrid Perpetuals, and the collection contained a Madame Plantier, and others which were not to be decided to be hybrid, the committee had some thought to award the premium to a lot of fine but rather inferior flowers; but as it was afterwards discovered that the opposing collection had two *Giant of Battles* to make up its number, we do not certainly know how the point was decided. Verily it is no enviable office to be a judge at a flower show. There were, however, some good things in both collections, the best in Mr. Buist's we took to be Duchesse De Praslin, Prince Albert, Bernardin, Victor Verdier, Florence de Jerceaux, Youland d'Arragon, Giant of Battles, John Hopper, D'Alencon, Province Panache, Marshal Soult, Brennus, Mad. Plantier, Aubernon, Beauty of Waltham, Jules Margottin, Leon Harman, Henry 4th, Madame Trotter, Caroline de Sansal, Madame Boutin, Duchesse de Nemours, Lilace, Salet, General Breon.

In Mr. Graham's collection we noticed as very good.—Abd el Kader, Mrs. Wood, Baron Hallez, President Lincoln, Deuil de Prince Albert, Lord Raglan, Baron Prevost, Triomphe de L'Exposition, Charles Lefebvre, Duke of Orleans, General Jacqueminot, Vanquier de Goliath, Prof. Kock, Victor Verdier, Alfred de Rougemont.

Mr. R. Scott had a very fine collection, but as he was one of the judges, they were not entered for competition. Amongst them we noted very fine Prince Camille de Rohan, Charles Lefebvre, Mad. Chas. Wood, Lady Emily Peel, Beauty of Waltham, Lamont Descont, Henriette des Bois, Foster, King's Acre, Turenne, H. Lowenstein, Princes of Wales.

Amongst Mr. Bisset's roses we noted as amongst the best Eugene Appert, Reine des Violettes, Mathew Regimer, Souvenir, Glorie de Dijon, Crystal Palace, Beauty of Waltham, and Leon des Combats.

Mr. Dreer had the 1st premium for Fuchsias—they were.

Two of each, twelve plants—Conspicua, Madame Crouse, Elm City, Rose of Castile, Reine Blanche, Roderick Dhu.

Twelve varieties—Glorie de Marches, Golden Plover, Aurora, Constellation, Hector, Lord Palmerston, Emperor of the Fuchsias, Souv. de Cheswick, Sir Colin Campbell, Brilliant, Conselier Desiral, Mandarin.

SUMMER MEETING OF GRAPE GROWERS

The Lake Shore Grape Growers' Association will hold their annual meeting for the inspection of vineyards, in the vicinity of Cleveland, on Tuesday and Wednesday the 25th and 26th of this month (Aug.) The first day (afternoon) will be spent at Callanie and East Cleveland; the second day will embrace visits to Rockport, Dover Bay, and Avenpoint, where are some of the largest and best vineyards on the whole Lake shore. On the 27th it is probable a party will start on a visit to Sandusky and the Islands. Persons from a distance who desire to see for themselves something of the condition and prospects of our grape culture, will do well to come to this meeting. It is expected the Lake Shore line Rail Roads will grant return passes to those in attendance. For programme of particulars address the Secretary of the Association, M. B. BATEHAM, *Painesville O.*

GRAPES ABOUT CINCINNATI.

At the meeting of the Wine Growers' Association, held on Saturday, the 27th of June, Dr. Warder stated that he had mildew on his grapes already. Had applied sulphur to some of them to see what would come of it.

Mr. Mottier had noticed some mildew on his Catawbas, none on the Ives and other sorts.

Colonel Waring said that his vines seemed to be very healthy, but the fruitage was light, greatly to his surprise. He was anxious to know the cause. What fruit there is is in a healthycondition. The paucity of the fruitage is general through his vineyard, as also through those of some of his neighbors.

Mr. Thompson said that this was a new phenomenon with the Ives, as it had hitherto given a full crop every year. Colonel Waring had known the Ives for twenty-six years, and had not known it to fail of a fair crop till this season.

He supposed the slimness of the crop this season was due to the late frosts. His land is rather cold at best. Mr. Werk said that his vines were healthy, and the bunches were thick enough, but the grapes were thin on the bunch.

Mr. Bartlett spoke of vineyards that looked well and were bearing abundant fruit.

Mr. Thompson thought that on the whole there would be as much wine made this fall as usual, of a better quality. Fewer bunches often yield as much juice as a heavy set, and the juice makes a better wine. Dr. Warder spoke of the large foliage that may be seen on some vineyards, and suggested that very early pruning or pinching of the vines will greatly improve the fruit.

Mr. Fisk had exhibited leaves of the Ives sixteen inches in diameter, greatly to the delight of all grape growers. He found that buck leaves when the early shoots were killed by the frost, had attained a size six or seven times larger than usual.—*Ohio Farmer.*

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HINTS FOR SEPTEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

There is not so much enjoyment in summer as in spring flowers. After the total absence of floral beauty during winter, the spring blossoms are doubly welcome—and then the season of the year renders them enjoyable beyond anything that the heats of summer will allow. From now till November the hardy flower roots will be sought for as amongst the most interesting of spring flowers.

The most popular of these hardy roots is the *Hyacinth*. Of these, the single kinds usually bloom the earliest, and are by some deemed the sweetest. The Dutch catalogues have hundreds of varieties, many of them very difficult to distinguish one from another. Every year some new kind is brought out in Holland at high prices. This season the greatest novelty is the Ko-i-noor, which is offered at $200 per 100, gold, at wholesale; which, when it is remembered that the common kinds rate from $3 to $10 per 100, will give some idea of its imaginary worth. Generally speaking, the named kinds will produce the best to the purchaser, as the unnamed ones are too often inferior bulbs, and not that otherwise there would be much difference in the quality of the flower.

Unless very well acquainted with the varieties of Hyacinths and other bulbs, it is best to leave the selection of the kinds to the dealer. The best manure for all kinds of bulbs is rotten cow manure. Half rotten stable manure, or rank matter of any kind, is not good. Very rich garden soil, without manure, is better than to have this matter fresh.

Of *Tulips* there are many classes. The single dwarf varieties are very early; the double ones of the same class come next. The Parrot Tulips so called from the singular warty edges of the petals, are the next earliest, and then *the* Tulip so well known for its large, full cups of all colors.

The next most popular bulb is the *Narcissus*, of which there are only white and yellow varieties—but these so varied in shade and shape as to afford a dozen or more of single and double kinds.

The *Crocus* is another popular bulb, as there are so many shades of color, white, yellow, blue, and the many shades between, they make gorgeous masses in the spring flower garden. They have a beautiful effect when placed in clumps on the lawn, where the flowers come through and expand before the grass begins to grow. The sloping sides of a terrace are often made to blaze with beauty in this way; and besides, the extra warmth of these terrace banks, when full to the sun, make the roots flower much earlier than they will in the level garden ground. Crown Imperials have been much improved of late years, and there are now some dozen or more of varieties. But the old Red and the old Yellow are good things to have at any rate.

The *Snowdrop* is, perhaps, the earliest to flower of all bulbs, being, in Philadelphia, often out by the 1st of March. There are the double and the single, both desirable—but the last we think the prettiest. They should be planted where they are to remain several years, as the after-removal, as with other bulbs, is not favorable to an abundant bloom.

Persian Iris, *Ranunculus*, and *Anemone*, are very popular and beautiful bulbs in Europe, but do not reach anything like the same perfection here.

Among the miscellaneous hardy bulbs, which flower early and are very desirable, are Japan Lilies of all varieties, and all kinds of Lilies, although they are scarcely to be ranked with spring flowers—many of them, indeed, not opening till July.

Then there is the *Allium moly*, two kinds, yellow and white; *Camassia esculenta*, a plant of the

Squill family, and very pretty; *Erythroniums*, white and yellow; *Leucojum æstivum* and *L. vernum*, with white flowers; various *Ornithogalums;* the American *Pancratiums; Scillas* of various kinds, especially *S. Sibirica*, *Zephyranthus atamasco*, and we may add the various *Pœonias*. These are all hardy, and really good things.

The *Lily of the Valley* can be treated as a bulb by planting out beds in the fall, and will always be admired when well grown. Like the Snowdrop, however, it does not like frequent changes of locality. It prefers a good top dressing to a transplanting.

Preparing for spring, also, many flower seeds should be sown in September. The *Pansy*, especially, everybody has, as it is one of the most cheerful and loved of all spring flowers. *Wallflowers*, *Carnations* and *Hollyhocks* should also be sown. The young seedlings must be protected in winter; but this is easily effected by drawing a little earth over the plants, entirely covering them. Next to snow, earth is the best plant protector. In sowing seeds remember that, in all cases, it is best to sow on a little elevation rather than on a full level with the ground.

As the planting season arrives, it is as well to repeat what we have often remarked, that the relative advantages of spring and fall planting are about evenly balanced. Failures, follow all seasons. *How to plant* is of far more importance than *when* to plant, and the selection of stock to plant, of far more importance than the time when it is done. A tree that has been once or twice before transplanted, and again carefully and intelligently taken up, may be successfully removed at either planting season, with the odds of perhaps one hundred to five in its favor. But a tree never before transplanted—such, in fact, as a tree from the woods, or left standing in the nursery from the seed-bed, is very risky at any time, and depends rather on the weather following transplanting for the first few weeks for any probability of success. In selecting trees for planting, then, be very particular to ascertain that they have an abundance of fibrous roots, and are carefully removed. In this region, we would plant evergreens at once, after or in prospect of the first good rain. Deciduous trees we would plant just before the final fall of the leaf, shortening off the ends of those shoots that were not quite mature. After the 15th of October we would not plant evergreens, nor deciduous trees after the first of November. Early or not at all should be the motto.

Propagation of stock for next year's budding, should proceed vigorously. The best way to propagate all the common kinds of bedding plants is to take a frame or hand-glass and set it on a bed of very sandy soil, made in a shady place in the open air. The sand should be fine and sharp, and there is, perhaps, nothing better than river sand for this purpose. The glass may be whitewashed on the inside, so as to afford additional security against injury from the sun's rays. Into this bed of sand cuttings of half-ripened wood of the desirable plants may be set, and after putting in, slightly watered. Even very rare plants often do better this way than when under treatment in a regular propagating house. In making cuttings, it is best to cut the shoot just under a bud,—they root better, and are not so likely to rot off and decay. A cutting of about three eyes is long enough for most strong-growing things, such as geraniums, fuchsias, &c.

Small growing things, of course, will take more buds to the one cutting. From one to three inches is, however, long enough for most cuttings. They should be inserted about one-third of their length under the sand, which latter should be pressed firmly against the row of cuttings with a flat piece of board,—not, however, hard enough to force the particles of sand into the young and tender bark, which is often the first step to decay. For a few cuttings, they may be inserted with a dibble; but where many are to be put in, it saves time to mark a line on the sand with a rule or straight edge, and then cut down a face into the sand, say one or two inches deep, when the cuttings can be set against the face like box-edging.

All amateurs should practice the art of propagating plants. There is nothing connected with gardening more interesting.

Many kinds of bedding plants of succulent or sub-fleshy growth, can be taken up from the flower beds on the approach of frost, and cut in, say one-half, and packed thickly in boxes of soil, and kept in a rather dry and cool cellar through the winter. Such fine plants make a much better show in the beds the next year than plants of the present season's striking. A cellar is one of the most useful appendages to a garden. Were we to have only *one* choice, we should prefer a cellar to a greenhouse for its general usefulness.

We have had many inquiries recently about cold pits for the protection of half-hardy plants

through the winter, and in reply reprint the following from one of our back volumes:

Those who have no greenhouse, and yet are desirous of preserving many half-hardy plants through the winter, employ *cold pits*. We reproduce from a former volume directions for making them:

Choose the dryest situation in the garden, and sink about five feet in depth. It is important that no water can be retained at the bottom. The pit may be of any length required, and about five feet wide, so as to accomodate six feet sash. The inside of the pit may be built up of boards, or, if something more durable and substantial is required, brick or stone. The body of the frame may be built up a few feet above the level of the surrounding soil, and the earth which comes from the pit be employed in banking up to the upper level of the frame. Shelving should be made for the inside so as to extend from the base of the front to nearly the top of the back, on which to place the plants in pots. In the space which will then be under the staging, hard wooded and deciduous plants, as lemon verbena, fuchsias, &c., may be safely stored, while the more succulent kinds are shelved overhead. The plants to be preserved in such a pit should be potted early, and be well established and healthy before being pitted; much of success depends on this. The less water they can be made to live on without withering through the winter the better will they keep. Straw mats must be employed to cover the glass when freezing time commences, and when the thermometer is likely to fall below 20°, straw or litter should be thrown over. Board shutters are also excellent, as it keeps the snow out from the straw and litter, which sometimes makes the mats very awkward to uncover when we would like to give air. Very little light or air will be required through the winter when the plants are not growing. If a good fall of snow cover the pit, it may lie on undisturbed for two weeks or more without injury. When a warm dry day offers, the sashes may be raised if convenient, to dry up the damp. Many kinds of border plants can be kept over winter this way with little trouble.

FRUIT GARDEN.

A great revolution has occurred in selecting fruit trees for planting. Bushy plants are now sought for. The shade which the side branches make is considered beneficial to the tree. As to the beneficial effects of continual digging about trees, which we oppose, all cultivators are not unanimous; but most of them now abandon it after some years: the only difference of opinion being how many years after planting shall this style of cultivating continue? With very low branched trees there is this advantage, that the plow or the spade cannot approach very near the trunk. Rich soil is however essential to good growth and good crops. This is the essence of "good cultivation."

In preparing for planting trees, the soil should be stirred up at least two feet in depth. Of course, the trees should be planted in the holes only so deep as they stood in the ground before, rather higher, if any thing, as the soil will settle. Good common soil may be filled in the holes if the natural soil is very bad; but any thing applied as manure may be stirred in the surface-soil after the trees are planted. Some object to making deep holes for planting trees, as if the soil is stiff they become wells, collecting water from surrounding soil, and rotting the roots. It is best to underdrain such soils before planting. If this cannot be done it is best to plant such ground in the spring. The water objection is a fatal one for fall planting in such ground.

Trees that have long stems exposed to hot suns, or drying winds, become what gardeners call 'hide-bound.' That is, the old bark becomes indurated,—cannot expand, and the tree suffers much in consequence. Such an evil is usually indicated by grey lichens which feed on the decaying bark. In these cases a washing of weak lye or of lime water is very useful; indeed, where the bark is healthy, it is beneficial thus to wash the trees, as many eggs of insects are thereby destroyed.

Whitewash is frequently resorted to by farmers; but the great objection is its unsightly appearance,—the result is otherwise good. The great opposition to washes formerly was, that the pores of the bark were closed by them,—this was on the supposition that the bark was alive; but the external bark of most trees has been dead years before the the time of application; and "the breathing," if so the operations of the pores can be called, is through the crevices formed in the old bark by the expansion of the growing tree by which the living bark below has a chance of contact with the air. No matter what kind of coating is applied to the bark of a tree, it will soon soon crack sufficiently by the expansion of the trunk to permit all the 'breathing' necessary.

Strawberry-beds may now be made to advantage. Choose thrifty young runners, that have plenty of good white fibers, setting them no deeper in the soil than plants were before removal. The best runners come from young plants of the previous year,—old plants usually make feeble runners.

HOT AND GREENHOUSE.

In the greenhouse, repairing and thorough cleansing must not be delayed. Painters say this is the most advantageous month to paint wood-work. Whenever the night temperature falls to 40°, any tender plants in pots should be housed, without waiting for the "first week in October." Things nearly hardy, as Azalea, Rhododendrons, Oranges, &c., do best out "to the last."

Any desirable plant for forcing, that may be growing in the open border, if potted early in the month, will do very well for that purpose. Weigela rosea does excellently this way, as also does Jasminum nudiflorum, Forsythia viridissima, many Spiræas and Persian Lilacs. Roses and other things intended to be forced early, should have as much air and be kept as dry as possible without injury. Hyacinths and other bulbs should also be potted as soon in the month as they are obtained; the former are best planted an inch deep. The earlier bulbs are potted the finer they flower—you may get *catalogues* of any number of kinds or colors at the *auction marts*. If you get ten per cent., as represented, when they flower, you will be favored.

Mignonette, Rhodanthe Manglesii, and similar ornamental annuals essential for winter blooming in well-kept houses, should be sown at once. Many things for next season's flowering, must not now be forgotten. The pansy, calceolaria and cineraria, are in this class. Plants of these that have been kept over the summer, will require a re-division, and kept in a close frame a few days afterwards, till they get re-established. Propagation of all things will still require constant attention. It should always be an aim to possess one duplicate plant as a provision against accidents. In many cases, young plants are preferable to old ones—so that the old ones may be destroyed when these are obtained.

In the hothouse, the Æschynanthus will soon be the chief ornament of this division. Their number has increased so that they have become quite a feature. If the pots seem full of roots, they may still have another shift. They prefer very fibrous peat; or, if that cannot be had, turfy loam, mixed with a portion of coarse moss. They will, however, do pretty well in small pots. Achimenes and Gloxinias, as they go out of flower, should be kept dryer and cooler. Look well after a good stock of pentas, cestrum and habrothamnus; they will go far towards keeping up the interest of the department in winter.

Justicias and acanthaceous plants generally, will probably require another shift, if fine specimens are desired. The atmosphere, if the house be light, can scarcely be too moist for them. Plumbago rosea is one of the most valuable stove plants we know for winter flowering; it requires a strong heat. Clerodendrons, as they go out of flower, should be kept in a very airy situation, and rather dry, preparatory to being cut down, and treated like a Pelargonium for another year. Many Begonias will be past their best flowering stage: very little watering serves them; they are very liable to damp off by incaution in this respect.

It is difficult to lay down rules for orchidæa, so much depending on the circumstances under which they are grown. Those which have finished their growth—as many Dendrobiums, Oncidiums, Catasetums, &c., whose flowers appear just before new growth—should have their supplies of moisture gradually lessened. The temperature, also, is better gradually lowered a few degrees, and they should be allowed more light than usual. The period when they are about completing their growth is the most critical, as any check at this time spoils the prospect of much blossom for next season. Those which flower from the young growth, as Catleya, Laelia, Broughtonia, &c., will require their moisture and heat rather increased than otherwise till after their flowering. Vandas, angræcums, saccolabiums and other strong-rooting ærial kinds, will require constant humidity, until it is evident, from the points of their roots, that they desire to stop growing. We are often asked "how often orchids require to be syringed?" If the situation in which they are growing be favorable,—that is, retains in its atmosphere a regular humidity,—they will require very little attention; in many cases not requiring the syringe once a week. Where this cannot be effected, the syringe must be oftener applied. As a rule, I think no better one could be offered, than to syringe orchids just so much as will barely keep moss attached to their block, and baskets green and growing. The real terrestrial orchids will require no moisture at all after they have completed their growths, until they show signs of pushing again. Care against checks in temperature and humidity is one of the secrets of successful orchid growing. Those which are at rest do well in a temperature of 60° at the lowest. Those which are growing well should be kept at about 80°.

VEGETABLE GARDEN.

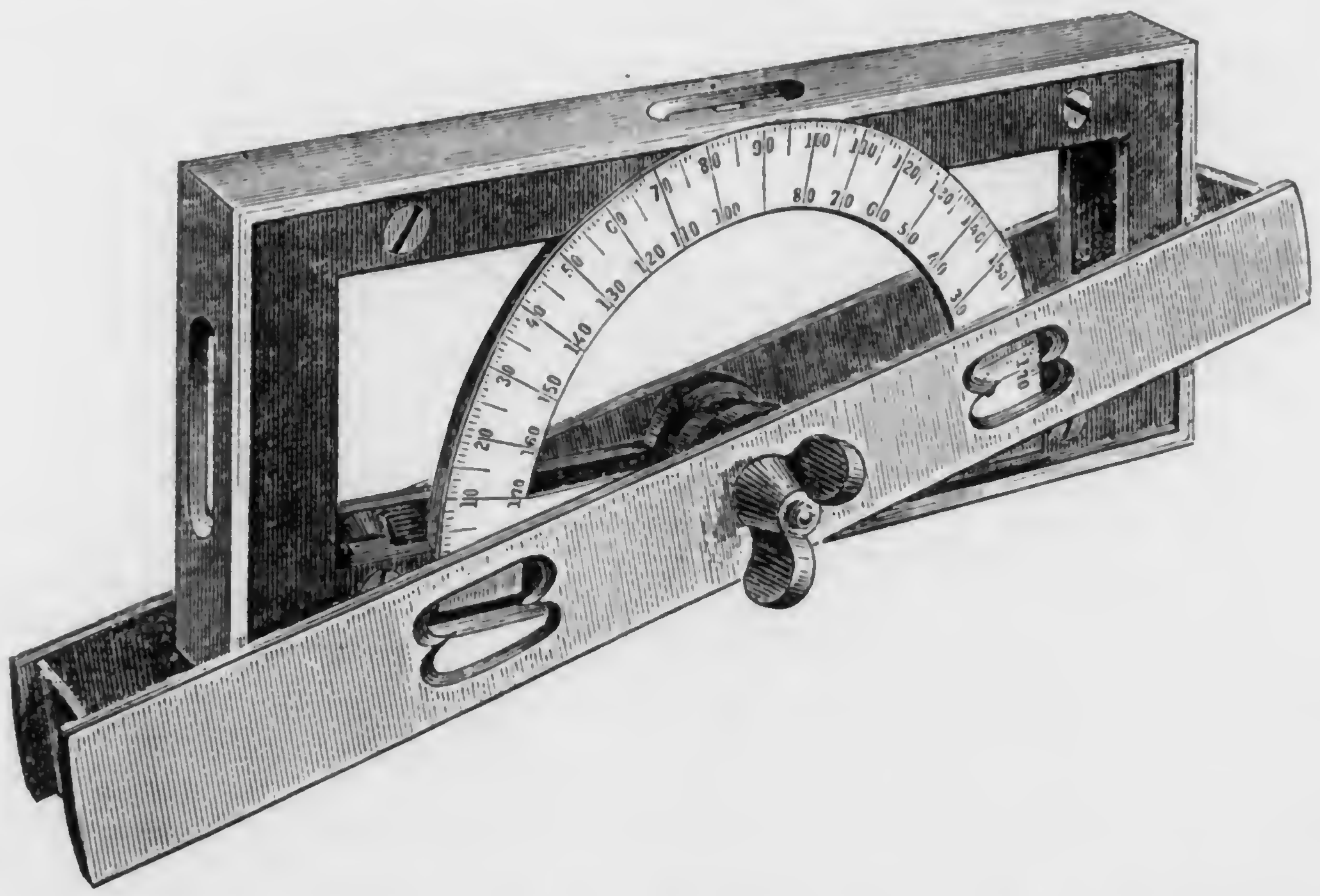
Earth up Celery as it grows, not letting the soil get to the heart, or it will rot. Soap-suds, or other manure water, helps it wonderfully at this season. Dig and house Potatoes. Too large a pile will heat, and any way they keep best when cool, and with some soil mixed through the heap. Sow Red-top Turnip for main crop; rich soil is essential. Transplant Endive; this also likes a rich loamy soil. It does not do well on sandy soil. Sow Radish and Lettuce for fall crops. Sow Cauliflower and Early York Cabbage about the middle of the month. Onions sown in fall make fine early bulbs for next year. Sow Prickly Spinach in very rich soil, for use through the winter and early spring.

COMMUNICATIONS.

A USEFUL IMPLEMENT TO GARDENERS.

BY D. K. K., AUBURN, PA.

Knowing that you are ever alive to any improvement that may help along the labor of the gardeners or those engaged in garden work, I send you a sketch of what strikes me as a very useful thing in its way. It is called Chamberlin's combined Square, Level, Bevel and Plumb, and is made by Batchelder & Co., Pittsburg, Penna.



It is made of brass or other metal, and not liable to get out of order. It can be conveniently carried in the workman's pocket. It is about eight inches long, two and three-eights inches wide and five-eights of an inch thick, in shell form so as to weigh but about half a pound. It is constructed as follows: A rectangular frame six inches long, two and three-eights inches wide, and five-eights of an inch thick, made perfectly true, in every direction, with a spirit tube inserted in one edge of this retangular frame, and on each side a protractor of brass. At a point exactly central with the protractor's arc, is fitted an arbor or axle, to which a frame is secured, which turns entirely around the rectangular frame in any direction, the arbor or shaft turning with it so as to be parallel with the upper and lower edges of the frame, at right angles, or more obliquely as the operator may desire. This frame may be retained in any position desired by means of set screw. The strips forming the two sides of the frame are perforated in four places with heart-shaped openings, the central part of which serves as indices and also to admit to the graduation being seen.

It will be readily seen from the cut how it may be used as a spirit level or plumb; as a *bevel protractor* or *slope level*, its use is equally simple. To me, however, it possesses a special interest in enabling me to measure the height of trees, the width of rivers, or any other inaccessible spot. For the former purpose adjust the instrument to an angle of 45°; recede from the tree to be measured, until the angle of sight strikes the top,—note where the angle strikes the ground also. Then measure the distance from this latter point to the base of the tree, which will be its true height. It seems to me to be an instrument every one ought to have.

[Interested by friend David Klock's description, we sent to Pittsburg for a veritable instrument, and find it all he says of it. It is really an ingenious and useful little affair, and we lend our columns to make it more known with much pleasure.—ED]

HORTICULTURAL AFFAIRS OUT OF PHILADELPHIA.

BY WALTER ELDER, PHILADELPHIA.

While on my way to Albany last June, I had a half day to spend in New York, and called at the seed stores of Thorburn, in John St.; and Henderson & Fleming, 67 Nassau St. At both stores there were many small chip baskets with handles, packed full with plants for sale. The insides are lined with moss or fine hay, and plants growing in *two inch* and *three inch* pots are tapped out of the pots and closely packed in the baskets and their roots covered with moss or hay. The sizes of the baskets are nearly 5 x 10 inches inside, 6 x 12 inches and 7 x 14 inches. In the smallest size therein is packed ten verbenas in bloom, and sold for one dollar, or six geraniums, for one dollar. Second size: fifteen verbenas or nine geraniums; one dollar and fifty cents. The largest size: twenty verbenas or twelve geraniums; two dollars. Some of the baskets are filled with different genera, such as Heliotropium, Coleus, Achyranthus, Alonsia, Geranium, Bouvardia, Petunia, Antirrhinum, &c., all from 3 inch pots. A small printed business card is tied to the handle of each basket, with the genus and number of the plants inside, written upon the blank face; for example "ten verbenas $1," "6 geraniums $1," "twelve plants of sorts $2," they sell very readily; and the plants, being well watered after packed, they will keep safe nearly a week. Upon the Steamboat DREW which conveyed me to Albany, almost every lady passenger, and very many gentlemen, too, had one or more of those basketfuls of plants, to set out in the gardens of their rural summer retreats. Those basketfuls are capital for the beaux to present to their belles as tokens of affectionate love. Peter Henderson was the first to use the baskets. I also called in to see "Whitlock's All Nurseries in one," 245 Broadway. It is a vast museum of the latest improved and lately invented machinery, hand implements and other apparatus to expedite and cheapen the labor of the farm and garden. And there are numerous plates of the latest improved flowers, fruits and vegetables; of cows, horses, sheep, swine, poultry, &c., the offspring of which can be purchased through that establishment.

On my return home, I visited the culinary vegetable gardens of Mr. Peter Henderson, at South Bergen, N. J., about two miles from Jersey City. Everything upon the grounds was in perfect order, and Mr. Henderson was a perfect model of politeness and intelligence. His vegetable crops were all of luxuriant growth and systematically arrranged; and so were all the various kinds of flowering plants. His glass houses are very numerous; of ingenious construction; for economy in material, space and light; and for heating and watering. His stock of flowering plants is nearly all of a herbaceous nature, and are of the best and rarest species and varieties. Where we have seen hundreds in other establishments, he has thousands and tens of thousands. He had already sold a million of verbenas, and many thousands of other species.

The most numerous genera of his herbaceous stocks are, Verbena, Petunia, Salvia, Chrysanthemums, Dahlia, Coleus, Achyranthus, Lobelia, Phlox Drummondii, Geranium, Antirrhinum, Delphinium, Spiræa (of variegated foliage), Carnations and Picotee Pinks, Phlox, Lilium, &c., all of the best and rarest of the genera.

Of Ligneous plants, all the best Roses in large numbers, and thousands of young plants of

Fuchsia, Aloysia, Bouvardias, Lantanas, and others too numerous to state here. The demand for them has always been greater than could be supplied.

Mr. Henderson began with a capital of only $400, and raised vegetables, at first, to bring a quick return; and in all his stocks up to the present time, a speedy return for his outlay appears to have been his aim. I would advise all young men intending to begin the florist business to go and see Mr. Henderson's stocks, and his systems of propagation and culture. His vegetable crops prepare the grounds for flower crops the following seasons. Every species of industry and economy is there practiced, without any appearance of stinginess or tyranny. Every lad and man upon his place loves him, and all appear more anxious about the prosperity of the business than himself.

He has been lavish in his improvements, but in a manner to make them profitable. He was preparing the ground for the erection of a large glasshouse, 280 feet long, and 30 feet wide; span roofed—to be finished this fall.

His dwelling house is like a villa, with an acre of lawn, beautifully ornamented with neat flower beds cut out upon it, and planted in the ribbon style, with various kinds of flowering plants. Behind the lawn there is a patch of two acres of everblooming Roses, and an acre of Grapes, Strawberries and Vegetables for his private use, (but he does not grow that sour and coarse strawberry, Albany Seedling,) and he has the best Blackberries. A street divides this lot from the large business grounds, and is on top of a hill. The whole grounds slope—some parts steeper than others.

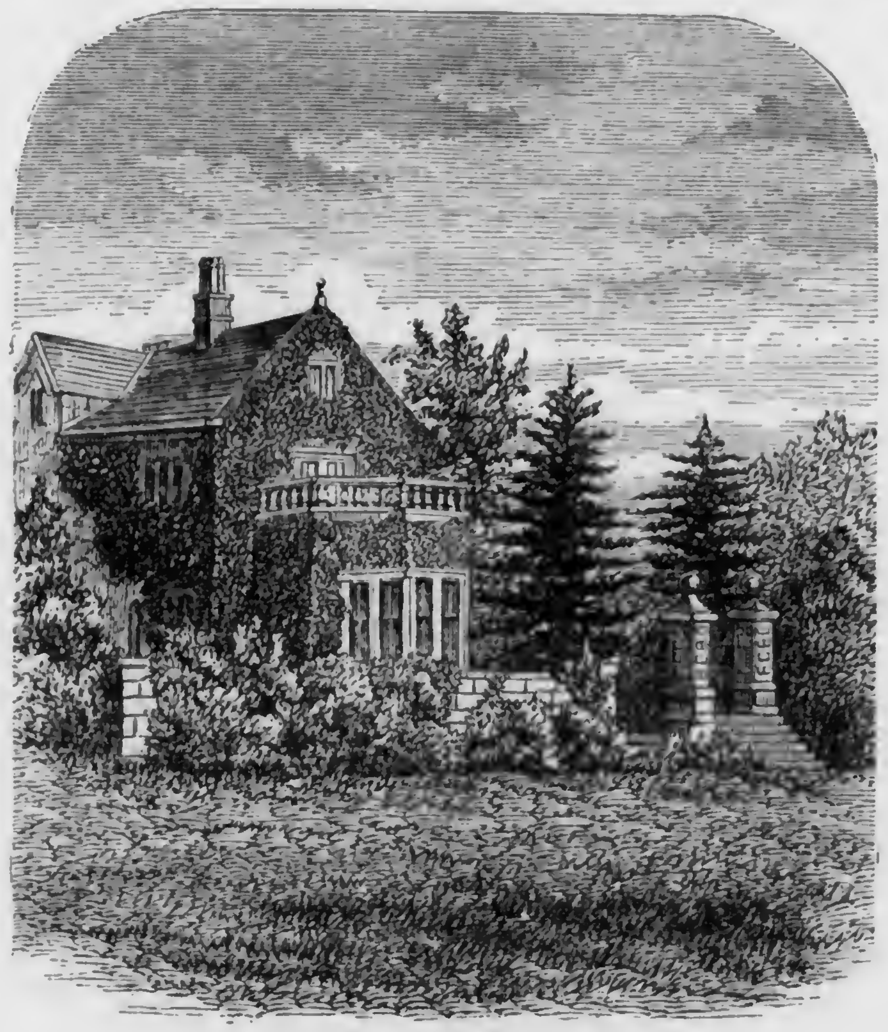
Any one who has read Peter Henderson's defensive articles, could hardly imagine him to be the polite and quiet young man that he is.

FOREIGN REMINISCENCES.

No. 5.

BY H. W. SARGENT, ESQ.

In forty minutes after leaving Derby you can reach Matlock, or Matlock Bath, as it is usually called. About three miles from here, after a charming drive, you pass a nice old place, "Willersbey Hall," the early home of the Arkwrights. Here was the old mill in which the spinning Jenny was invented and first used. A mile or so beyond is "Lea Hurst," the residence of Florence Nightingale, a pretty cottage house, half hidden in ivy, with two striking cedars of Lebanon over the gate.



[LEA HURST.]

The Estate belonging to Miss Nightingale, or rather her father, was a large one of 5000 acres, and three villages. We passed through two of them, but they were antiquated and untidy, and had not the appearance of comfort and thrift usually seen in English hamlets. In fact, as far as we could ascertain, Miss Nightingale was not very much at home; and her benevolence seemed rather to seek objects abroad, like the Crimean war, than to confine herself to her own surroundings.

A mile or so beyond Lea Hurst, brought us to "Wingfield Manor," a grand old ruin, of the time of Henry IV. Here Mary Queen of Scots was a prisoner nine years. Eight miles from the Inn at Matlock is Haddon Hall, belonging to the Duke of Rutland, one of the most interesting old houses in England, in perfect preservation though built in the eleventh century. Haddon Hall is the original of Miss Radcliff's "Mysteries of Udolpho.

Two miles beyond Haddon is Bakewell, famous for its sheep; and adjoining is Chatsworth, the celebrated seat of the Duke of Devonshire; but so well known to many of our readers, that I will not take up their time by describing it. The place itself is not as interesting as it was twenty years since, during the late Duke's and Mr. Paxton's time; the present Duke's taste not running in this way. The fine avenue of Araucarias and Deodars had been destroyed by the cold winters of 1860, and had not been replaced. In fact we saw very few of the rare evergreens. The ribbon of the great conservatory was composed of Perilla Nankinensis (back row), Tom Thumb Geranium, Verbena "Purple King," and Cerastium tomentosa. They make great use here of the Tagetes for an orange color in their ribbons.

Our next visit was to two very remarkable places, Alton Towers, Earl of Shrewsbury's, the most ornate and florid place in England; and Biddulph Grange, W. Batemans', the most scientific and artistic place I ever saw, both near Congleton, which has or had the additional merit of an excellent old Inn, "The Lion and Swan," perhaps architecturally the quaintest Inn in England, except the "Feathers," at Ludlow.

"Alton Towers," is a complete Italian villa, with Italian gardens, filled with a succession of beautiful terraces, vases, statues, fountains and flowers. In fact the variety and beauty of the conservatories, orangeries, greenhouses and flowers, the abundance and luxuriance of the trees, especially Evergreens, were enchanting.

On the banks sloping down to the lake, the Cedars of Lebanon were especially grand; so also was a group of Menzie's Firs, at least 50 feet high; some Douglass Firs 70 feet high, and feathering to the ground, were superb; Sequoia sempervirens 18 feet high; Araucaria, 15 and Goven Cypress13, were very fine. In the Camellia house most of the large specimens 12 to 15 feet high, as well as the Azaleas were trained into most beautiful pyramids. In the architectural gardens much use was made of red gravel.

In most of the finer places in England, the winter garden, as it is called, immediately under the breakfast room windows, is often composed (the beds) entirely of different colored sand, producing from the windows the effect of a brilliant parterre. The red being pounded brick; the white pounded oyster shells; the dark blue, being a peculiar colored slate,—an idea that in our droughty summers might be well for us to adopt, instead of our burnt and yellow lawns. Humea elegans was much used at Alton Towers in centre of flower beds.

I hardly dare to undertake a description of Biddulph Grange, 22 acres of ornamental grounds; a Wellingtonia Avenue, a beautiful Pinetum, a rock garden, a stump garden, a Dutch garden and a Chinese garden. 15 men are allowed to keep the place up. The Rhododendrons are more wonderful than any I ever saw; but the gardener always picked off half the buds and all the seed vessels.

The Pinetum here is one of the most successful things in England. It is arranged on each side of a long walk which in bold, though easy curves, makes the entire circuit of the pleasure grounds. Along the borders of this walk are broad spaces and margins of grass, running irregularly into numerous larger or smaller bays or recesses, composing the bases of the mounds that rise on both sides, and upon which the trees are irregularly planted. These undulations, changing from 6 to 20 feet in height, and filled with endless swells and depressions, are planted mostly in heather, thus forming an admirable back ground for the different tinted Conifers, the paler colors of which are admirably relieved by the dark foliage of Yews and Hollies.

After passing through the large family of Pines, you come to the Abies and Picea tribe, and these carry us to the tunnel which divides the Pinetum from the Rhododendron ground; all the Firs are placed in a lower and more sheltered spot than the Pines, which are chiefly on the summit of the rocks and mounds, among

them are noticed Abies Morinda and orientalis, fine specimens, P. pinsapo, Cephalonica, nobilis, grandis, amabilis, Lasiocarpa, &c., all admirably grown.

Shortly before arriving at the tunnel, which has a wide natural looking entrance arch, formed of two large irregular side stones and a keystone, over which Ivy, Periwinkle and other trailing plants hang, a break in the mound to the north, leads us to an irregular grass glade, like a bowling green, surrounded by small picturesque mounds on which are plants of more tender Pines, like Benthamiana, macrocarpa, filifolia, Fremontiana, Jeffreyana, &c., as also Cryptomerias and Taxodiums.

Entering the tunnel, we encounter an obscure path on the right, so enshrouded by shrubs as almost to escape notice, and which leads into a wild rocky glen, through which runs a picturesque little brook, filled with aquatic and marshy plants, as well as a complete series of hardy ferns.

Leaving this, and returning to the main walk, we at length reach the famous Rhododendron garden, with masses of plants on low irregular banks; with intervening patches, and glades of grass, and a lake-like piece of water containing an island, mostly planted in Rhododendrons. The whole of this enclosure of perhaps an acre (including the lake and island,) is devoted to American plants: Rhododendron, Azaleas, Kalmias, Gaultheries, Menziesias, Epigæas, &c.

The Kilmarnock Weeping Willow is occasionally planted on the margin of the lake. The red flowering Chestnut is also very effective on the island, being in bloom the same time as the Rhododendrons. The next feature of interest is the Chinese garden, very difficult of access, so that strangers may wander about for hours without being able to find either of two narrow passages by which it is approached.

The best mode of entering it, however, is from the rocky glen just mentioned. Through a long irregular dark tunnel, apparently excavated from the living rocks, and flanked by grottoes of of considerable extent.

Passing through this, the visitor suddenly finds himself on the threshold of a gorgeous Chinese Temple, the view from which, forcibly reminds one, of the old familiar "Willow plate" pattern, which you are told suggested the idea of the garden. The temple with its gilt bells, dragons and lanterns, looks out upon a little lake, surrounded by bold masses of rock, spanned at narrow fronts by the inevitable Chinese three sided bridge, with the zig zag railing, and overhung by the weeping funebral Cypress. On the right is a gaudy Joss house, approached by a winding flight of steps, and on the left a tiny fort, mounted with two guns. Lines of ruined wall, supposed to be the great wall of China, flank the garden on every side; a great sleeping frog—with Lions, Kymans and sundry Chinese monstrosities,—have each their separate place, the whole surmounted by a gilt Bull the size of life.

The garden is filled only with plants, indigenous to China. Such as Yulan, (Magnolia Conspicua,) the Tea plant, the funebral Cypress, and many more requiring protection of a house in the winter. When to all this is added, an Italian Garden, for the drawing room windows, a quaint Dutch Garden for the Library, and a rose and verbena garden for the breakfast room, and an Egyptian court, connected with a conservatory, your readers may gather some slight idea of Biddulph Grange.

TOMATO GROWING.

BY J. JOYCE, GARDENER TO MRS. E. H. BUTLER, GERMANTOWN.

In a recent number of the *Gardener's Monthly*, is an article recommending the growing of tomatoes to stakes, instead of training them on trellises or suffering them to grow on the ground. This is recommended on the ground of the improvement in the quality of the fruit, the Editor not feeling satisfied that the quantity is so large when supported on stakes, as when grown on the gronnd or any of the usual ways. The quality of the fruit is, as the Editor says, vastly superior on staked plants, but my experience is that the quantity produced is greater on stakes than in any other way. I will guarantee to raise *one bushel from every plant so raised*, and I should be glad to know whether that quantity has ever been raised from a single plant on any other plan. I set my plants to stout poles eight or ten feet high along the walks of the vegetable garden. They usually reach the top before frost, and continue to bear till then. They are now (July 25th) seven feet high. They form a beautiful sight when in fruit; indeed my vegetable garden looks prettier with them than many flower gardens.

Besides the superior quality and quantity of the fruit when so raised, and the neatness and beauty of the plan; they are always clean, free from dirt and sand, are solid to the core, never decay or have blotchy spots, and occupy very little ground. Indeed I grow other crops quite up to the stakes. Please call and see them.

[We have called, and are very much pleased with the sight. Mr. J. is evidently right about the quantity. We did not speak positively about this, because we had not the experience necessary to enable us to give it as a fact. This Mr. J. supplies. We have now no doubt that as a matter of profit as well as of pleasure, it will pay handsomely to stake tomatoes to tall strong stakes, wherever these can be had.—Ed.]

VINEYARDS AND WINE IN WASHINGTON COUNTY, MD.

BY A. C. P., BALTIMORE.

Recently I spent several days at Hagerstown, where I found considerable attention paid to vineyard culture and wine making. Mr. George Heyser has several acres, mostly in Concord, Clinton and Catawba, all doing remarkably well but the latter, which as usual, is badly mildewed. Mr. John Heyser last year planted out a new vineyard, chiefly of Concords, they have grown finely and show some fruit this year. His vineyard is very prettily arranged, the vines are grown on trellises, which radiate from a common centre, with half radii to fill up the spaces of divergence. An ornamental structure erected in the centre, affords a view of the whole vineyard.

In his garden he has several trellises of Catawba, Diana, Delaware and others. The day before my visit to his place, he congratulated himself on the healthy state of his Catawbas, and the fine prospects for a crop, having the same day given his vines a heavy dusting of sulphur; when the next morning we examined the vines, to our dismay the bunches of all the Catawbas and some other sorts were completely infested with mildew, and the crop destroyed, while scarcely a leaf showed signs of fungus. Thus in one single night the damage was done, and the sulphur of no avail. Possibly the germ of it had fastened on the bunches before the sulphur was applied; yet the spread over so many vines in so short a time, seemed remarkable, and that the leaves should have escaped, appeared more remarkable still. Had this mildew been propagated *by spores*, I should think it would have attacked leaves and fruit alike and simultaneously. To me it seemed that a peculiar state of the atmosphere might have induced the spontaneous growth of this fungus on the more susceptible skins of the berries first, the attack on the leaves showing later; at any rate I am inclined to think the disease is caused by radiation from the earth and might be prevented by mulching.—Against the dew the bunches are sheltered by the leaves, and when the latter are attacked, they always show it on the *under* side first.

We also noticed some bunches on the same trellises, which hanging near or against a post, were comparatively free from mildew, the post undoubtedly intercepted the radiation, and on this theory the roof over the trellis,—which you suggest—may possibly be the right thing, as it also intercepts radiation. [Mr. Saunders suggests.—Ed.]

Both these vineyards are on lime stone land of porous texture, water never lodging on it; the situation is elevated, with fine exposure.

After our party had got through the vineyards, the owners afforded us also the opportunity to test the vintages. Mr. George Heyser produced Concord wine of white color, clear, pure in taste and pleasant, but lacking body and aroma; next Catawba of 1866, an excellent wine of fine color, some aroma, fruity, palatable; and finally Catawba of 1865, made of grapes *after frost.* On tasting this wine I almost suspected a mystification, and that some choice Rudesheimer or other high grade Rhine wine had been set before us; such exquisite bouquet, such rich flavor, body and fire, I never before had discovered in American wines; all of which excellent qualities, apart, of careful preparation, Mr. H. attributes to his gathering the Grapes *after they had a slight frost.*

I persuaded Mr. Heyser to submit a bottle to the judgment of connoisseurs at your fall exhibition, and I want you to have an eye on *that bottle.* At Mr. John Heyser's we were regailed by some of his Catawba, also a very nice, pleasant wine of fruity flavor, and next to a Concord wine of a beautiful ruby color, the latter produced by rubbing the skins, instead of *fermenting on the skins.* This wine made last fall, was too young to show what it may be when ripe. Both gentlemen evidently have the skill and experience for making fine wines, when they can raise the right material.

In the afternoon we drove to the vineyard of Mr. Appleman. This is situate in the slate region, on very hilly and apparently poor land. The vines were planted last year and look thrifty; there are many varieties, but the Concord seems

to go ahead of them all, some showing considerable fruit and not a sign of mildew on either fruit or leaf of any variety.

Such poor neglected *slate hills* may prove a very paradise for the grape, as well as other fruits, and what can be made out of a rough and wild piece of land, Mr. Appleman, by dint of patient labor and manure, has demonstrated. A young orchard planted by him, at the same time, has made a fine growth, but was sadly damaged by the locust.

In the garden of an amateur friend in Hagerstown, I found a great collection of new varieties of grapes on trial, some fifteen or more of Roger's different seedlings, also the Martha, Black Hawk, Diana Hamburg, and others; also five seedling hybrids of Mr. Arnold of Paris, Canada West, said to be the result of a cross from the Black Hamburg and Clinton, the foliage plainly shows the characteristics of both, their thin smooth leaf of the Aestivalis tribe and the lobes of the Vinifera; they were only planted this spring, but growing finely. I have great faith, that from *this* cross we shall derive sorts which will combine hardiness, vigor and exemption from disease, with quality and size of fruit, fit for wine and the table.

NOTES FROM TEXAS.

BY MR. THOS. AFFLECK, GLENLYTHE, NEAR BRENHAM, TEXAS.

Permit me to correct an error in Mr. Berckman's communication on Southern Peaches. That best of all late peaches, the *Lady Parham*, was not *raised*, but was made public by me.—One of those excellent men, a Methodist Clergyman of the old regime,—the late Rev. Benjamin Drake—found the peach in Warren County, Miss., an accidental seedling, grown—I think he said—by a Mrs Parham; and brought me cuttings to bud from, and specimens of the fruit, at same time suggesting the name adopted.

I have just had the misfortune to have my promising young orchard of pears, what grape vines I have, a fine lot of young peach and almond trees loaded with fruit, all stripped of leaves, fruit, dormant buds, and the bark around the base of shoots and buds, by the migratory Locust. And this, after a persevering, hard-fought fight during fully three weeks. But they were too many for me. It is now too late, I much fear, for even a sufficient number of *adventitous* buds to push, to save the trees.

I never had a more promising vegetable garden; albeit, worked entirely by a pair of arms which during their over a half century of use, never before worked so hard. Fully half of it is gone. And the fight is so hard a one, in the attempt to save the remainder--fought by one on one side against millions—that I greatly fear they wear me out and take all.

I enclose you specimens, those with wings, the parent insects, which came from the north-west early last December, deposited their eggs and perished; those without are the produce of those eggs, now some seven or eight weeks old. They are packed with the anti-septic, disinfecting and deodorizing cresylic powder, in which they almost instantly died, and in which has cured them like red herring.

I tried the cresylic compounds—the soapy solution—but only partially, for want of assistance. But, sprinkle as I would, they managed to find portions enough to devour. Just like all of these migratory pillagers, it must be a very foul dose they wont swallow. The Cotton worm is not easily *bluffed*, but the moth is more sensitive, as all moths are.

Mr. Sargent's views as to fruit-growing, on this continent, are unhappily but too correct. Mr. Wilkinson is right, as to his means of water supply. There is none so sure, even in this comparatively dry country, as good underground cisterns. And no other source yields water so pure and uniformly healthy. Many a location in this Southern Country, which at first proved any thing but healthy, became entirely so, on cistern water being used.

All of those numerous plans for filtering, so frequently published in the north, are unnecessary. The water purifies itself in a few days. And is all the better for so doing. Mine is a jug of broken stones, hydraulic cement and sand, 18x14, sides perpendicular, and underneath the house. The earth through which it was dug, was not homogenous nor sound—hence the wall of concrete.

SOME WINTER FAVORITES.—No. 3.

BY JAS. C. JOHNSTON.

7. Lobelia speciosa. (*Var Paxtonii, &c.*)

In the humid climate of England, this is a charming summer and autumn subject, out of doors; but it succumbs to our overpowering sun, and drags out a miserable existence. At least that is our experience, after many experiments.

But we are more than repaid for these disappointments, by the result of indoor treatment during the bleak period of winter, and through the long months of spring. It would be difficult to suggest a more useful plant, for a variety of positions and purposes, in the conservatory, than this Lobelia. It yields a mass of lovely blue flowers, when that color would otherwise be nearly wanting among the profusion of reds, white, &c.

To attain the desired results, the following treatment is indispensable; at least we find no other to answer so well: Early in May sow seed in shallow boxes and place these in a nearly spent hot bed- any other suitable position, however, will answer. When the young seedlings are fit to handle, transplant very carefully into other shallow boxes. We prefer to set them out in pairs or trios, just as they are lifted. After growth has fairly commenced, counteract as much as possible all tendency to hasty and superficial development. Retarded growth is the main object—*upwards*, but as much lateral expansion as possible. If the seedlings become leggy, decapitate without mercy.

Middle or end of June, on a suitable day, transplant, with the least possible disturbance, into small pots, never less than 3, and up to 5 seedlings in a pot. The sod should be decomposed leaf mould and thoroughly decayed sod—equal proportions—with a little gritty sand, and a very small quantity of much decayed cow manure. Shade from the sun until growth has begun, then plunge the pots in the coolest situation obtainable, where they can have unimpeded light and air, without much sunshine. Under the shade and drip of trees is objectionable. While in these small pots the formation of flower stems is not to be permitted. Use a sharp knife (but a scissors is better) and cut off every vestige of embryo flower stems. They submit to this treatment with a good grace and grow bushy, which is the object to be attained.

By the 1st of September the pots will be full of roots, and the plants little dumpy—Dutch built masses of luxuriant growth, ready to obey orders.

And now for their disposal to the best advantage. The method we have found most productive of an abundant and long protracted bloom, is a circular wire trellis to fit the pot exactly. It is made sufficiently close to nearly confine the slender shoots within its compass, thus obviating the necessity for training and tying up, although a few stragglers find their way out, and are not to be spurned. Inside the trellis 5 seedlings are to be transferred (now—it is to be taken for granted — well developed, strong plants; or otherwise, there must have been a screw loose somewhere). Use a liberal drainage of old mortar from a wall, above which place some broken charcoal and fill up with a compost of decayed leaf mould and fresh loam—equal proportions; adding a very little cow dung, or manure, from an old hot bed, so old as to be easily friable. If the loam is not tenacious, dispense with sand, or use it sparingly. Set the pots in a cold frame where they are to remain until the middle or end of October, and only cover at nights when pretty sure of frost. Continue to decapitate flower stems *until the pots are removed to the greenhouse*, where they must be placed near the glass, and have all the light and air possible. At this time only one application of weak manure water may be given.

During the period of bloom never use cold water; it must be, at least, of no lower temperature than the house, and to be 10 degrees warmer is still better. The wire trellis should be 9 inches high (above the surface of the pot)—5 inches across at the same point, and 10 inches across at the top. Presently the Lobelia will fill the inside space and reach the top. It is a charming subject, standing by itself in a pedestal, or if better can't be done, use an inverted pot to raise it on the shelf or stage, so that the flowers may not be overshadowed by more robust neighbors.

It may be grown in small pots placed on the edge of a shelf, or on a nich, where the slender stems can hang downwards; also in hanging baskets—but no treatment compares favorably with the wire trellis, on which this indefatigable bloomer is quite at home. It is sheer waste of time to force this plant, for blooming in the house. It is only by the retarding process we have described, that a satisfactory result can be obtained, and no conservatory should be without a minimum complement of half-a-dozen trellis grown Lobelias, a mass of bloom from December till May.

8. CORONILLA GLAUCA.

This is another worthy member of the floral guard that do winter duty, always responding at roll call. It is of a neat compact habit (when properly treated)—not a profuse but liberal bloomer. The flowers are pea shaped and of a brilliant yellow. It is somewhat difficult to strike, but seed germinate quickly and produce by far the best plants. They thrive and branch out in a manner cuttings rarely, if ever, do.

When done blooming, prune back immediately and be not sparing of the knife, or dilatory in removing out of doors, soon as frosts are over. When new growth begins to show, re-pot, but be in no haste to increase the size of pot. Better to remove with care the outside of the ball, and fill in with fresh compost of generous quantity. Never use the same pot again until it is washed and thoroughly cleaned. A viler or more slovenly practice could scarcely be suggested, than to re-set anything—no matter how humble the plant—in a dirty pot.

9. POLYGALA DALMAISIANA.

A very suitable companion plant to Coronilla, producing similar shaped flowers, of a purplish carmine hue, varied with white, and prolonged over a period of three months. It requires the same treatment as directed for Coronilla.

10. PELARGONIUM—BELLE BLANCHE.

With a few exceptions, the Pelargonium expands its gorgeous bloom in one large family party, and a more beautiful reunion there cannot be. But there are some half-dozen eccentric individuals of precocious habit, who precede their brethren, and bestow their charming flowers on us, when they are doubly welcome. Of these, Belle Blanche is the earliest, blooming in February. Unlike many of the best Pelargoniums she is wonderfully prolific and enduring, producing a succession of fine trusses for at least 2 months. The flowers are white—of exquisite purity, with a very distinct feather-like blotch on the upper petals. Plants of 9 months from the cutting yield several fine blooms, and if properly treated, one, two and even five year old plants, are covered with a mass of flowers.

Taste and judgment is necessary in manipulating that and almost every other Pelargonium, so as to develop the bloom advantageously. The stakes—which must be of sufficient height—(from 1½ to 3½ feet according to age of plant) are to be firmly set with a slight inclination outwards, and not perpendicular. It is quite possible so to dispose of the branches as to hide these stakes entirely by the time of expansion, and so display a compact and pleasing specimen of foliage and flowers. A loose straggling bare-stemmed Pelargonium should not be tolerated by an amateur. A succession of plants are easy of attainment by striking cuttings during May and June.

11. PELARGONIUM—CRIMSON KING.

This is another of the early blooming Pelargoniums. The flower is by no means perfect but inasmuch as we have such a mass of color, at a period when it is most appreciated—not for a day, or a week, but at least 2 months—on well-grown plants, a blaze of bright crimson; it will not do to criticise it over strictly.

Unless well-grown, however, and properly trained, it is an awkward, troublesome subject. Stakes of sufficient length apparently, and which would suffice for other sorts. prove entirely too short for Crimson King, owing to the length of its slender flower stalks. And unless these are skilfully fastened as they grow, and *before expansion*, it cannot be done neatly afterwards. It is quite a common thing to see specimens, with many of the blooms upside down, in consequence of delaying this most necessary manipulation. When done flowering, it requires to be severely cut back, allowing only 2 eyes for new growth, and all treatment avoided which would develop premature shoots during summer and autumn, It is better to dispense with old stools which have flowered twice, and depend on a younger generation.

12. DAPHNE INDICA.

There are several varieties of this invaluable evergreen. There is no particular beauty in the small truss of flowers, but the odor is delicious —perhaps the most perfect of any. In ordinary greenhouse temperature, during winter, Daphne's will bloom towards the end of February, and last about 3 weeks. If neglected, these shoots become unsightly and unmanageable afterwards. Reject—in purchasing—long legged, straggling specimens, such as are too common in many nursery stocks. If you can't get a dwarf bushy plant, wait till you find one. And when you do, see to keep it so. That is to be done by a judicious use of the knife; and it is not so easy to indicate precisely how. Briefly, then, select those branches that have grown considerably longer than their immediate neighbors and shorten these in, if possible, above the junction with a small lateral, so that there may be no gap. And where two or more branches diverge, remove the longest. The proper time to do this is shortly after the blooming season, before the young growth begins. After that has developed, very possibly, a long—tender shoot, here and there will require removal. It is an excellent plan either to peg down the lower branches—

round the sides of the pot, or to fasten them to a wire attached to the rim, which induces and promotes a dwarf bushy growth. Do this as soon as the new wood can be safely handled—not later than July. The best soil for the Daphne is equal proportions of loamy peat and perfectly decayed leaf mould, with a fair sprinkling of silver sand—(sifted white marble sand, when obtainable, is excellent). And if you can add a little cocoa fibre to the compost, it will be perfect.

By peat loam, we don't mean wet—sour swamp muck, such as farmers excavate in summer, after the stagnant water has dried up and piled away to dry, preparatory to being carted on the fields. This stuff is a pretty quick mode of administering poison to any and every kind of plant grown in pots. Nor is good peat loam easy to find. It must be sought for in woods, among "the untrodden ways,"—in deep dells where water may have once lain, and ferns, leaves, and branches, in the long and slow process of years, have decayed and amalgamated into a spongy but not tenacious mass. When dry it is friable and easily broken by hand—requiring no sifting. This material is worth its weight—almost in gold—to the florist. With that, and three years' old decayed leaf mould, he is independent.

Very nice plants of Daphne can be had by stricking cuttings of half-ripened wood. It is a slow process, but the plants are incomparably superior to those worked on stocks. Insert the cuttings in small pots—(close to the edge) then plunge these in shallow boxes, with close-fitting glass, and set them in a cold frame, not exposed to the sun. On bright days it will be necessary to shade the cuttings with thin muslin. Use water sparingly and uncover seldom as possible. Azaleas and other hard wooded subjects can be propagated in the same manner—but it requires patience.

WOOD FIRING WITHOUT CONTACT WITH FLAME.

BY WALTER HARVEY, PITTSBURG, PA.

I noticed in a late number, writing of greenhouses getting burnt, you state that you once saw a wooden chimney, 50 feet away from the furnace, take fire. Let me here state that I had a narrow escape in February, 1867. One cold night, the chimney not being high enough to carry the smoke over a building that was close to the chimney, and I could not have any fire, as it blew out of the mouth of the furnace. My only remedy was to make a wooden box to put on the top of the chimney, or let my plants freeze.

Of course I tried the box. It was to remain only till something could be done; but, as it answered very well, and having no thought of any danger, it was left on. From the furnace to the chimney was 62 feet, and the chimney 11 feet high, making, in all, 73 feet from the furnace to the box.

On the 27th of March, 1868, this wooden box caught fire, but by seeing it in time, with assistance, I took it down without any further damage. I hope this will be a caution for people not to use wood on the greenhouse chimney, even if a thousand feet away.

WINTER ON RARE TREES IN OHIO.

BY MR. E. MANNING, HARRISBURG, OHIO.

In looking over the *Monthly* for June, I was perfectly astounded by your account of the doings of Jack Frost the past winter. The doleful account you present, of the wide-spread desolation all around you and the good people of Philadelphia, is truly sad. I never thought that such trees as Hemlock, and others which you mention, were ever injured in any part of the United States. It is the first time I have heard of such disasters.

Not only so, but the account given by Mr. Sargent, of Wodenethe, N. Y., and accounts from Baltimore, of the fatality of the past winter on Evergreens and other trees, is surely quite startling, as well as discouraging to the true lovers of Arboriculture.

Fully sympathizing with you in your great loss and disappointment, not only of yourself but your neighbors, it occurs to me to write you a few lines of condolence in your troubles. I have not seen any report from central Ohio of such disasters. I have waited till this time to fully ascertain the amount of damage done here.

Among Deciduous trees, Salisburia adiantifolia, laciniata, macrophylla and variegata, are all uninjured. Twelve varieties of Magnolia, including Thompsoniana and longifolia, all uninjured. Gold Bark Weeping Ash, nearly the entire top killed; Kolreuteria paniculata killed outright; Acer colchicum rubrum killed; A. platanoides and lacinata uninjured; Cercis japonica killed to the ground. The more common trees have escaped.

Among Deciduous Shrubbery, Weigela rosea, W. Desboisii, W. Grænewegenii and Middendorfiana, uninjured; W. amabilis, killed; W. Joscine, killed to the ground; Halesia diptera and tetraptera, both killed; Æsculus flore pleno albo, and rubicunda, uninjured; Sophora japonica, uninjured; Gardenia pubescens slightly injured; Catalpa kæmpferii uninjured; Shepherdia argentea, uninjured; also, Eleagnus angustifolius.—All the commoner kinds uninjured.

Among Evergreens, all the commoner kinds of Pines, Firs and Spruces, uninjured. Among the newer varieties, Pinus Benthamiana, P. Pyreniaca, P. Cembra, P. Mugho rotundata, uninjured. Among the Firs, Picea Nordmanniana, P, pinsapo, P. pectinata, uninjured; Picea Cephalonica, killed; P. amabilis, badly injured; P. nobilis, uninjured. Spruces, Abies Whitmanniana, A. Archangelica and A. Menziesii, uninjured. Juniperus, all the common varieties uninjured. Thujopsis dolobrata, Juniperus chinensis variegata, J. excelsa, J. oblonga pendula and J. sabina variegata, uninjured; Cupressus Lawsoniana, uninjured; C. glauca, badly scorched, but will recover. Retinospora pendula, uninjured. Torreya taxifolia, slightly injured. Thujopsis borealis, Cephalotaxus Fortunii, uninjured; Podocarpus japonica, badly injured; Taxus aurea and elegantissima, uninjured; Cryptomeria Lobbiana, fine varieties of Box, all uninjured. Mahonia japonica, 4 ft. high, protected on the west, open on the north, uninjured; M. Bealli, badly scorched. Small Euonymus, green, variegated, and maculata aurea, badly cut. Silver-leaved E. maculata, protected on the west, open on the north, unhurt.

There is a number of other varieties, not mentioned in this report, both Evergreen and Deciduous uninjured.

The greatest degree of cold noticed here last winter was 13° below zero. It, then, from that down, continued long and hard. When I read your report, it made me rejoice—not at yours or your neighbors' losses, but that I had escaped so well. If my report had been made six weeks sooner, it would have been much worse. I have waited to know the exact result.—June 29th, 1868.

[We believe things generally did not suffer here so much as was at first supposed. Especially is this so of Rhododendrons. The evaporation was very great, from foliage exposed to the wind and cold together; but this extended little farther than to the foliage. In many instances, the main stems pushed out again.—Ed.]

EDITORIAL.

WINTER PROTECTION TO PLANTS.

All our readers know that snow is the very best plant protector. But we do not know that it is much better than earth, drawn over the plants just as the winter is about to set in. We have frequently recommended this in our columns, but not near as much use is made of this fact as might be.

For instance: every one knows how much better cuttings root, when taken off in the fall, than when it is deferred till spring—but the fear of having them drawn out by frost seems a greater evil. Now, many adopt our plan. Put the cuttings in in fall, and cover with two or three inches of earth. In the spring they will be through to the surface; or, if not, some of the earth can be taken off.

Much use, also, is made of the fact by many nurserymen to get young seedling stock set out. It used to be the fashion to buy them in the fall, and bury them completely up in a heap till spring, covering tops and all. But spring always finds more work than the nurseryman can do. Under this new system of earth protection, he now sets out his young stock where it is to remain, covering it entirely with earth, and uncovering it early in spring. By this means he gets an immense amount of work done in fall, in time otherwise unemployed—and better done, as the plants root a little, and push stronger than when spring planted.

GERANIUMS FOR VASES.

One of the most beautiful sights we have seen this year, was two large vases entirely filled with Geraniums, selected with regard to a harmony of shades, and then a number of them put together thickly in each vase. The effect was as if there were but one plant in each vase, and this plant grafted with all sorts of varieties. The foliage was especially selected to look alike, and the one difference visible was in the colors and shades of the flowers.

Geraniums generally are the most effective agents in flower garden decoration, but we have never seen them used to better advantage than in this case.

CANNAS.

These beautiful plants are now much used in French gardening, and are becoming popular with us, because they stand our summer sun so well. The foliage has the appearance of Banana leaves, and the tropical character, so valued in gardening, is better obtained in the Canna than in any other plant.

Most of the Cannas flower late, and this is the one great objection. *Canna indica*, however, flowers early, but is not very showy; but use has been made of it to hybridize the late flowering ones, and a race of good things has resulted. Mr. Such, of South Amboy, sent us a French hybrid last spring, called *C. Rendotlerii*, which has been in constant bloom since June, and promises to last through the season. This, *C. indica* and *C. Warcewiczii* are all early flowering, and the three make a very desirable set for summer decoration.

IMPROVEMENTS IN THE MAGAZINE.

It is popularly supposed that it is "dress which makes the gentleman." Popular opinion is not always right. Dress is well enough in its way, and one can display a good deal of taste in the indulgence thereof. But when it simply furnishes a cloak for a hollow heart, or the cover for a brainless head, it does not sum up well.

We have never aimed to rival Beau Hickman in the make-up of the *Monthly*. We found a large class hungering and thirsting for horticultural knowledge, who had not the means to pay for gold or silver vessels to eat or drink from. We stepped out in our working dress to help them. We gave them substantial food, and they returned thanks to us. We offered them but the pure spring water, fresh from the fountain of our own experience, and we found it was all in all to them.

At length, the fashionables came to our table, and sat with us. We sought them not. We wished to interfere with no man's guests. But they came and were welcomed and found themselves at home.

Thus we became, in spite of our own aims, a leading representative of American Horticulture. *Every* intelligent Horticulturist in this country, and large numbers in Europe, read us, and we have always felt it due to this distinguished but unsought position, to dress up a little to the extent we can afford.

We are in daily receipt of compliments on the excellence of our engravings, and generally improved appearance since the first of the year—and this, when it is remembered that we give as much printed matter in our thirty-two pages for $2, as we might spread out over double the number and charge $3 for, if we were to wander from our original missionary enterprise,—we think is very high praise; and we shall do our best to continue to merit the continued good opinion of our friends.

THE LESSON OF THE YEAR.

Our remarks on this head have received general assent; but some friends profess themselves horror-struck at the "absurdity" of some of the positions we have assumed. One, particularly, in the *Journal of Agriculture*, of St. Louis, wonders that an intelligent magazine should teach that there can be any evaporation from a tree at a time when "all the juices of a tree are frozen solid." But it so happens that whatever "absurdities" we may have taught, this one great absurdity that the juices of a tree can ever "freeze solid," and the tree, at the same time, *retain its vitality*, has never received any aid from our pen.

Our neighbor, *Hovey's Magazine*, also thinks we are wrong. It alludes to the fact that the wood of trees sometimes crack in severe weather, and asks the question, "Could excessive evaporation cause the splitting open?" Now if our contemporary wants us to explain why the wood of plants split open in severe weather, we think we can enlighten it. But that is foreign to the present subject, which is, Why plants die *when they do not split*. The *Magazine* admits it is "unable to tell," and the writer in the *Journal of Agriculture* does the same. Since writing the above we notice some remarks by Mr. Sargent, to which we shall revert at another time.

SCRAPS AND QUERIES.

CHANGE IN FIRM.—By our cover page it will be seen that our publisher has associated with himself Mr. CHAS. H. MAROT in the business of printing and publishing. With increased facilities, they hope to be able to make the *Monthly* still more acceptable to its readers. The name of the firm will hereafter be BRINCKLOE & MAROT.

THAT SOUTHERN LILY.—*Mr. J. W. Wood, Washington Heights, N. Y.*, writes: "It is some time since you heard from me, one reason probably is that I find the pages of the *Monthly* filled with such excellent, readable, digestive matter, that I do not see that any contribution from me would enhance or add to its value.

My object in writing to you now is to make a few remarks about an Amaryllis or *Southern Lily*, which I have observed in the last two numbers of the *Monthly*, the last from Prof. Russell.

17 years ago when I was with the late Mr. Hogg of Yorkville, N. Y., we had a number of what I conceive to be the *true* Amaryllis longifolium. Mr. Hogg, whose mind was always active, inventive and practical, thought he would try a few of them out of doors. I thought it was a rash experiment, but as the old adage says: "The man that pays the fiddler has the right to choose his own tune," I said nothing about it.

Well we put out about a dozen or fifteen bulbs out of pots in the spring, in an outside border close along the wall of the hothouse, and planted them pretty deep. There was a gutter at the bottom of the sashes, and the flue inside came very near the wall, consequently all the frost in the ground did not amount to much, and for five years afterward, to my knowledge, they bloomed beautifully every year; and for how long afterward I cannot say. The flowers answer the description of your first correspondent in the July number—a scape or footstalk about 15 inches long with from 2 to 5 white fragrant blooms. Mr. Hogg was well posted in bulbs, and if I am not mistaken, was well acquainted with the Rev. Mr. Herbert—one authority Prof. Russell quotes—a resident of Manchester, I believe, 40 years or more ago. If there is a true A. longifolium, I believe the one above alluded to is the true one.

Now for part No. 2. About 3 years ago I received 2 bulbs in a pot, in full leaf, which a lady living here had brought with her from near New Orleans. She asked me if I knew what they were—I told her I did—they were A. longfolium. I labelled them so and attached her name to them. She went immediately to Europe—came back this spring. I returned the plants—they did not flower, but the longer I kept them, and the more I looked at them, the stronger my,convictions were that they were not the true A longifolium.

I will give you my reasons. I will admit that they, the leaves, have the same glaucous hue of the *true* longifolium but they are very dissimilar in form and length. The Southern bulb I am alluding to (except in color) resembles somewhat the foliage of Agapanthus umbellatus, while the other one is at least 5 or 6 inches longer, more flaccid and becomes slightly revolute for the last 4 or 5 inches and is more tapering. Recollect this is whether grown in pots or in the open ground. It is now thirteen years since I saw the original one. So you may take these remarks for what they are worth, but my impression is, that this Southern bulb is a *distinct* but a *very* closely allied species." [Since this was in type, we have more facts, which we will give next month.]

THE FATHER OF GRAPE GROWING.—*X. Y. Z.*—You are entirely mistaken. The gentleman you name has done much, and the party you attack has many faults. We never allow ourselves to be blinded to a man's real merits, by any short comings he may have.

Amongst living men, no one deserves so well of his country for the present favorable state of the grape interest as Dr. Grant. Whatever may be said of any other, this at least is his due.

PURPLE CRAPE MYRTLE.—*John Saul, Washton, D. C.*—I send you by mail to-day some flowers of a very beautiful high colored "Crape Myrtle (Lagerstrœmia indica) the truss of bloom is very large and compact, and color richer than any variety I have heretofore seen, please give your opinion of it.

[A very beautiful variety. The common one is light rose—this, deep rosy purple.]

THE VENUS FLY TRAP.—A correspondent says, referring to the article we have in last month's issue, *i. e.* "Notes on Dionœa muscipula," and a very able article it is; the author of it reminds me of Darwin, not the present

Darwin, but a predecessor and also a relative, a native of Litchfield, England, the birth place of the pompous lexicographer, Dr. Johnson. Darwin was the author of a unique little work called "Loves of the plants," which probably you may have read some years ago, and your correspondent on the Dionæa approaches him as near as possible in close observation and patient investigation, but I think he errs in one remark he makes about the circumscribed locality in which it grows.

I have had plants from the boggy grounds on the table lands in Georgia, and plants have been sent from there to Kew, and my impression is they can be found pretty plentifully there now. But this fact (if it is a fact) does not detract or weaken the merit of the article in question."

Names of Plants.-*G. S. C., West Fayette, N. Y.* The light Spiræa is S. salicifolia, variety *Americana;* the dark one S. Billardii.

Pursh's Journal.—*J. W.* says: "I have been much interested in the extracts from Pursh's Journal in the last two numbers. It recalls reminiscences of my younger days. I wish I had you with me now, or some kindred spirit, to go over the same ground, probably we should find Darwin's theory true, that there has been an increase of species, *i. e.*, find several new species that were not known in that locality then. Perhaps I am an *old fogy*, but I cannot swallow that doctrine yet."

Gardening in the South.—A correspondent, dating from Nashville, Tennessee, gives a very poor account of the adventures of a first-class gardener in search of a situation. He concludes his letter by observing that, "In time the South will be a good place, for gardeners, but that time has not arrived yet."

Hot Water for Mealy Bug.—*P., Baltimore, Md.*, says: I would like to be informed to what degree water has to be heated to be effective against the *mealy bug*, of which I have some in my cold grapery.

[130° is about the degree at which hot water will kill soft coated insects without injury to plant life.]

Culture of Sage.—*J. D., Sparland, Ill.*, writes: I wish to try the culture of Sage—in regard to the expense, profit and manner of raising it.

[We believe this is grown to some profit in the West. If any one will give us the details we shall be very much obliged.]

Hitching's Patent Boilers.—We have before us a circular containing the names of ninety-six distinguished horticulturists who have used these boilers and testify to their worth. This is testimony of which the manufacturers may well feel proud.

Substitute for Putty.—Some genius, whom we suspect never saw either greenhouse or coal tar, publishes the following:

"Coal tar, reduced one-half, and applied with a brush while slightly warm, makes an excellent substitute for putty on greenhouse roofs, besides holding the glass firm through all the changing seasons. It is also an excellent preservative of the sash."

In order to "prove all things" we had a few sash tried, and when the hot weather came the tar ran away.

BOOKS, CATALOGUES, &C.

A Guide to the Study of Insects, by A. S. Packard, Jr., M. D., with upwards of 100 engravings. Published by the author at Salem, Massachusetts.

Part II is now before us, and we are glad to take the opportunity of commending this work to the favorable attention of our readers. The great difficulty in the study of insects is that most authors presume too much on the preknowledge of their readers. This one starts from the beginning, and being written in a popular style, by an eminent scientific writer, it fills a want all have long felt. It is to be complete in 10 parts at 50 cts. each part.

Whitlock's Horticultural Recorder. Edited by A. S. Fuller. The August number is to hand. It is evidently occupying a useful field, and daily growing more popular.

The Southern Planter.—We had the pleasure of a call at our office of Mr. W. L. Hill, editor of the *Southern Planter* of Richmond Virginia, and was much pleased to learn that agriculture and horticulture in Virginia, and the South generally, are gradually growing towards a very prosperous condition.

The *Southern Planter* is achieving a great popularity, at which we heartily rejoice, as it deserves all its friends can do for it.

The Wholesale Catalogues of our nursery friends are becoming numerous on our table, for which we are very much obliged, as they give us much useful information, which we can often turn to good account in the way of advice to our correspondents. It is worthy of remark however, that very few descriptive catalogues are appearing this year. The only one so far before us is that of **Gould Brothers**, Rochester, New York. No. 1 is for fruits, and has a beautiful colored plate of *Clapp's Favorite Pear.* No 2 is for ornamentals and is profusely illustrated.

NEW AND RARE PLANTS.

Biglandularia Conspicua.—This fine plant has been introduced from the tropical parts of Brazil, and lately flowered, for the first time, with Mr. William Bull, of Chelsea. It is the representative of an entirely new genus of Gesneraceæ, with the habit of Scheeria and Locheria, nevertheless not belonging to the Achimenes tribe, but to the Ligerieæ. It is closely allied to Sinningia (Nees) and Ligeria (Dcne.), having a tuberous rhizome, and similarly shaped corolla, but both of those genera have five perigynous glands, whilst Biglandularia has only two, in which respect it differs also from every other known genus of the order.

The plant is about 1 foot high, and hirsute, the leaves being opposite, ovate oblong, and with a short acumen, dentated at the edge, and slightly cordate at the base. The flowers, which appear on long axillary peduncles—making it a free-flowering species—are yellow, paler on the outside than the inside, and the lower part of the tube inside is marked with elegant purple lines and dots.—**Berthold Seemann**, in *Gardeners' Chronicle.*

Referring to New Plants at the Royal Horticultural Society's June Show, the *Cottage Gardener* says:—

Of new plants there was a fine show, to which Messrs. Veitch largely contributed. They took the first prize for the best six new plants sent out in 1866 and 1867, with Retinospora plumosa, a very graceful species, and well deserving its name from its feather-like appearance; Sanchezia nobilis variegata, the yellow-veined foliage of which renders it one of the most handsome of variegated plants; Anthurium regale, with noble white-veined leaves; Maranta Veitchii, one of the finest of ornamental-foliaged plants; Nepenthes hybrida maculata, hung with numerous pitchers; and Dalechampia Roezliana rosea, with rosy bracts. Mr. Bull was second with the last named plant; Maranta rosea-picta, with beautifully marked foliage; Encephalartos gracilis, Trichinium Manglesii, Zamia villosa, and Echites rubro-venosa, with leaves beautifully veined and reticulated with red. Mr. Williams sent Maranta rosea-picta, M. Veitchii, Gleichenia circinata glauca, Fittonia argyroneura with leaves veined with pure white, Miconia peruviana, with Sphærogyne-like leaves, and Dipladenia amabilis, with glowing deep rose-colored flowers.

For the best six new plants sent out in 1868, Messrs. Veitch were again first with Begonia boliviensis, Alocasia Jenningsii, Retinospora filicoides; Croton interruptum, with bright red midribs to its narrow leaves; Davallia parvula, a charming little Fern with minutely divided leaves; and Alocasia intermedia, with large metallic green leaves, having a silvery lustre. Mr. Bull was second with Cibotium regale; Alocasia Jenningsii; Cyrtodeira chontalensis, with brownish leaves with a band resembling frosted silver longitudinally along the centre; Dieffenbachia eburnea, with white markings; Maranta virginalis, banded with white; and Panicum plicatum foliis niveo-vittatis, with leaves 1½ inch wide, exhibiting a few narrow white stripes, but ineffective as shown.

The best new plant shown for the first time in flower in Great Britain, was Dipladenia boliviana from Messrs. Veitch. The flowers are very distinct in color from those of the other Dipladenias, being white with a yellow throat, and measure about two inches in diameter. Messrs. Veitch likewise exhibited Osbeckia virgata, with purple flowers and prominent yellow stamens. It is a native of Ceylon. Mr. Bull was second with Lysimachia tubinoides with small white flowers.

For the best new ornamental-foliaged plant, Messrs. Veitch were also first, exhibiting Croton Wisemannii, with leaves beautifully mottled and marbled with green and yellow, and a rich yellow band along the centre of the leaf. The same firm likewise sent Alocasia Chelsoni, with magnificent bronzed leaves, especially when young, and being then remarkable for their splendid metallic lustre. For the best new garden seedling in flower, Messrs. Veitch took another first prize with a hybrid Cattleya raised between C. Chelsoni and C. Acklandiæ, in which the colors are purple, white, and brownish green spotted with purple. Mr. Bull was second in the same class with Ivy-leaved Pelargonium Princess Thyra, with for its class large pale rose flowers, lined in the upper petals with crimson.

Opuntia Rafinesquiana (Engelmann).—This is the only species of Cactus hitherto known which withstands our severest winters without any protection whatever; the more remarkable because of its being a species of the Indian Fig, which otherwise occurs only in warmer climates. The plant forms a prostrate, spreading mass of obovate, flat, thick joints, which are dark green, perfectly smooth and spineless, flowering in July very handsomely, bright yellow, producing an abundance of red, fleshy fruits of a flavor very similar to Gooseberries, delicious as preserves. Children are extremely fond of them. It is a native of the Mississippi valley, Illinois, Missouri, Wisconsin. Its close habit of growth renders it well adapted for edgings, for which purpose we have employed it, looking extremely neat throughout the year, the more so in winter, not changing color or being affected in any way by any degree of frost, if the soil is well drained and no stagnant moisture allowed to remain near the plants.

[The above, from an English paper, refers to the narrow stemmed form of our Opuntia vulgaris.—Ed. *G. M.*]

Hybrid Coleus.—These are being raised in England by the hundred. The difference mostly consists in varying the number, position, or forms of the blotches of the leaves; in many cases, no doubt, the forms are as closely allied as some Begonias.

NEW AND RARE FRUITS.

The Wild Goose Plum.—We received the following note, and the plums, from *Manson & Willey* of *Murfreesboro, Tenn.* It is a variety of the American plum, and warrants all our correspondents say of it:

We send you this day a package, by mail, of Wild Goose Plums. This plum is a variety of the common wild plum of this section, but so much superior as to be regarded almost distinct. Although not equal to a "Green Gage" or "Coe's Golden Drop," and some others, it will not fall far below some of the finer varieties no longer grown with certainty. You will see by these specimens that the "little Turk" has tried his skill, but failed to produce an impression.

This plum will, if picked in nearly a green state, mature nearly, if not quite, as well as on the tree. Large quantities could be shipped several hundred miles, to the large cities, with more safety than peaches. Parties from Louisville have paid from four (4) to six (6) dollars per bushel here for all they could find.

The tree attains the size of a large peach tree and is a certain and enormous bearer. We class them among such fruits as Concord Grape, Wilson's Albany Strawberry, Houghton Seedling Gooseberry, &c., which, though not the finest, are yet the "fruits for the million," and pay the best. We grow the tree altogether on the peach, to prevent a multitude of suckers which all plums of this class throw up, to the detriment of the tree itself, and to the great inconvenience of the cultivator. It proves to do exceedingly well on the peach—will go off on its own roots quickly if planted deep.

These specimens are not more than two-thirds the usual size. A severe freeze, while in bloom, which killed almost everything else, seemed to check the growth of the fruit. We hope these specimens will reach you in good condition, and

if so, "you will be surprised that a fruit so good and free from disease or insects is not known better."

Naomi Raspberry.—On July 18th we received from Mr. *Geo. E. Hall* of *Cleveland, O.*, several boxes of this fine raspberry, which, although they had been three days gathered, and had traveled between four and five hundred miles, reached us in excellent condition, showing its fine traveling character. In quality they are equal to most popular varieties, and we regard the variety as a very desirable one. It is thus described by F. R. Elliott:

Fruit.—Size, large to very large; form, roundish, slightly conical, or obtuse conical; hairs, long; grains, large; color, bright, rich red; flesh, firm and sprightly, rich and delicious; canes, strong, with numerous lateral branches when fruiting; brown, smooth, occasional inconspicuous spines; leaves, broad, lanceolate, very productive and hardy.

Strawberry Napoleon III.—We have received a beautiful colored plate of this variety from Messrs. *E. J. Evans & Co.* We have before spoken highly of it. It is now known that the reason why foreign strawberries were once in disrepute was owing to the fact that they are not adapted to the bed system. With good culture they are far superior to the American. We suppose Napoleon III will be popular. The following is Messrs. Evans' description.

Fruit large to very large, irregular, flattened, varying from oval to cockscomb-shaped; color, handsome rosy-red, shading to darker red in the sun, and waxy-blush in the shade; flesh of snowy whiteness, firm, and of sprightly, high flavor, with a delicate aroma; the plant is very vigorous and healthy, with large, dark-green foliage, which endures the sun remarkably, and is very productive, in some localities exceeding even Wilson's Albany; flowers perfect. In season it is later than the Wilson, succeeding it and continuing long in bearing.

New Foreign Grapes:—

Golden Champion Grape.—This grape is a seedling raised by Mr. Thompson, of Dalkeith. In constitution it is equal to the Black Hamburgh; it sets freely under the same treatment, ripens earlier, and will keep in condition, when ripe, as long as that favorite variety; the bunches are large and well shouldered, berries larger than any grape known, flavor new and peculiarly rich. A visit to Dalkeith, purposely to see this grape, has confirmed a previous impression that it is in every respect first-class. I first saw berries of it two years since, and was struck with its wonderful size; I saw it again last year, and looked forward to a proof of its character this season, and the result now to be seen at Dalkeith fully justifies the assertion that it is everybody's grape. It can be grown anywhere, either in a cool vinery or in the early house; is as free and hardy as the Black Hamburgh, fully equal to it in flavor, and produces an abundance of superb bunches, the berries being unusually large, and the bunches close and well formed. Compared with Buckland Sweetwater and Golden Hamburg under the same treatment, the Golden Champion is the best, and I venture to predict that very soon the two first named and others of our common white grapes must give way before it. Of course it is not to be compared in point of flavor with our varieties of Muscat of Alexandria and Frontignans, but these require a considerable amount of heat, and cannot well be done without, while the Golden Champion is a hardy, easily-done grape, which can be grown readily in any common vinery, and in my opinion will be a first-class pot variety also. I am afraid to say all I think about it, lest I should be regarded as an enthusiast; at the same time I cannot refrain from expressing my firm conviction that this and the Black Hamburgh will be the two acknowledged favorite white and black grapes for general use throughout the land. Fine as it is just now at Dalkeith, it will be seen much finer another year. I say this because I believe in the grape, just as much as I believed in the Duchess of Buccleuch, another of Mr. Thomson's seedlings, from the beginning; and examples of this, as seen now at Dalkeith, and other places I could name, show plainly how hard propagation and other causes should make us cautious of condemning a new grape until ample time has been allowed for fairly testing it. —*William Dean, Shipley.*

Madresfield Court Black Muscat Grape was raised by Mr. Cox, at Madresfield Court, Great Malvern, from Black Alicante, crossed by Muscat of Alexandria.

Madresfield Court Black Muscat Grape resembles Alicante somewhat in the bunch, in the berry, and in color; but is superior to that fine variety, inasmuch as it is a free setter, and possesses the most intense Muscat flavor, combined with extraordinary lusciousness. As a late grape it is especially valuable, Mr. Cox having proved that it will hang for months after ripening without shrivelling.

DOMESTIC INTELLIGENCE.

Plants Injured in Winter by Evaporation.—Our contemporary, the *Gardeners' Monthly*, in noticing the destruction of many plants by the last severe winter, says, "if anything be wanted to teach people how cold kills plants, the past winter affords the material. It was at one time supposed that frost destroyed plants by rupturing the sap vessels. The cells were believed to expand and burst by frozen sap." "Some years ago," he says, "the writer attempted to show the fallacy of such a theory. In *Hovey's Magazine*, at that time, some of our best horticulturists argued the point. We endeavored to satisfy our friends, that when evaporation went on faster than the roots could supply moisture, the plant had to die. No theory of cell bursting was necessary. Evaporation is excessive in cold weather—when there is not enough moisture to fill the cells,—when it goes out faster than it comes in—they die; not by bursting, but by shrinking away. A recognition of this fact will save many a tender tree; and a review of the past winter's losses must convince one that such is the fact."

We need only refer to the articles alluded to, to show our views in regard to the action of frost. Additional experience has not materially altered our opinion. We have no doubt that great injury is done to trees by evaporation—but we cannot get away from the fact that this is the cause of but a small portion of the injury.

Take, for instance, the grape. In numerous localities old Isabella vines have been killed to the ground. Now if this is merely the effect of evaporation, how comes it that large strong old wood is split open in numerous places? Vines in cold graperies, where they have never been injured, have been killed in the same manner—by splitting open. These vines were laid down and protected in the same way they always have been, but notwithstanding this they have been killed. Could excessive evaporation cause the splitting open?

We admit, with our contemporary, that shelter from high winds is often a prevention of great injury to trees and plants. A single evergreen, standing alone, where the wind sweeps around it, is sure to suffer more than those in sheltered places; but how much of this injury is due to evaporation, and how much to other causes, we are unable to tell. The past winter was severe on many evergreens, which have been uninjured for several years; but we find those in sheltered positions, in many instances, injured quite as much as those that were fully exposed.

The subject is one of much interest to cultivators, and we should be glad to see experiments fairly made to ascertain the correctness of either theory—that of excessive evaporation—or injury by the destruction of sap-vessels.—*Hovey's Mag.*

Pear Blight.—Mr. Meehan, in his excellent paper on this subject before the Pomological Convention, in your city, advised allowing the sod to grow round pear trees in preference to clean cultivation, and you, Mr. Editor, endorse his position as far as standard trees go on pear bottoms. I can go further than you, and cordially endorse it in treating dwarf trees on the quince. Quite a number of years ago, in inquiring of one of the best pear growers I ever knew, the secret of his success, he said it consisted in a very few words,—let the grass grow all around your trees. I afterwards found in some horticultural paper, the advice given by one of the Newark, N. J., cultivators, in addition to this, always to add a wheelbarrow load of manure round every tree, every autumn. Anxious to do anything to avert the terrible slaughter of my trees from blight, this advice was carefully followed, and whether it was efficacious or not, I have never lost a tree since, although several years have elapsed. If I dared say that anything would cure pear blight, I should certainly say that this would, for it has given me more complete satisfaction than anything of the sort I have ever found in a book or paper, or tried before or since this trial.

To those who are suffering from pear blight, and they are certainly a legion, I would say, never cultivate the ground at all, particularly for dwarf trees, add a wheelbarrow load of manure every fall, and keep the grass cut close all summer. My success with this has more than satisfied me, and I intend filling up my vacant spaces next spring, and go into pear raising again. I prefer the dwarf sorts. They take up less room, bear earlier, and don't hurt your feelings quite so much when they succumb to their invisible but resistless enemy as so many thousands have done, as when a large tree perishes.

A good deal has been said about growing evergreens among pears to cure blight. I have given it a full trial, and though it stands to reason that they would greatly ameliorate the rigor of the climate, success has not been very encouraging—not by any means equal to the other treatment as above recommended. In twenty years' experience of growing pears, I have found but one variety that has outlived that space of time and is yet green and vigorous.—B. T., in *Journal of Agriculture.*

Fruit in Maryland.—The *Baltimore Sun* says that four gentlemen of Philadelphia have, within the past eighteen months, invested over $130,000 in the purchase and improvement of land in Somerset County, Maryland, near Westover Station, on the Eastern Shore Railroad, a continuation of and generally called the Delaware Railroad: and the Wilmington (Del.) *Commercial* has been shown a letter from one of the parties: He says that up to November 26th last, he had planted 250 apple, 250 pear, and 16,000 peach trees. He had also set out 16,000 blackberry, 2,000 raspberry, and 27,000 strawberry plants. He purposed planting last fall, 200 plum and 100 quince trees. A neighbor of his put out last fall 55,000 peach trees, and will go largely into the cultivation of small fruits. At the next station below, another gentleman has planted 20,000 peach trees, 1,000 pear trees, and will also engage largely in trucking.

Grafting Old Trees—New Way.—In the *Homestead* of the 18th inst., is an article from the *Germantown Telegraph* on grafting old trees. It is recommended to split the stump of the limb for the insertion of the graft. There is a much better way than that. Take the stump of a limb; say six inches in diameter; then when the bark will peel, split the bark from the top downwards, about an inch and a half; sharpen the graft from one side only; let the slant be long, so that it will not slip out when pressed by the string; raise the bark as in budding, and insert the graft with the cut side next to the wood of the stump—tie with a suitable string, and wax, all air and water tight. Let there be a strip of bark half an inch wide adhering to the stump between the grafts. Done properly, every graft will live.—Wm. P. Lippincott, Vernon, Iowa, *in Iowa Homestead.*

Cherries.—At the meeting of the State Horticultural Society at Cobden, and that of the American Pomological Society at St. Louis, the general impression prevailed that the Early May Cherry was the most valuable for market in all the prairie regions; that while it was conceded that other cherries might flourish more or less in certain localities, yet for the great market demand, the supply must come mainly from the orchard of the Early May.

The late Kentish and large English Morello, come also highly spoken of for cooking. That a better table cherry than the Early May was desirable, all admitted, but to find one that would stand the test of prairie orchards in the list of sweet cherries, was a question not so easily solved. Mr. Elliott was positive that we could do better than to depend on the Early May, and mentioned the Louis Philippe as the best of the sour cherries. We have not seen it, nor do we know of a single tree of this variety on the prairies. If any of our readers have it, will they not tell us about it. It should certainly have an extensive trial. Mr. Lyon spoke highly of it in Michigan, where he had known it for several years. But as most of the sweet cherries could be grown there, it had not been very widely disseminated. Mr. Elliott also recommended the Reine Hortense, Belle Magnifique, Kirtland's Morello, and Archduke: of them we have tried all but Kirtland's Morello, and have not been able to succeed with them. However, in all cases they were worked on the Mahaleb and Mazzard Stocks. We now propose to give them a further trial worked on the Morello. It is very desirable that we increase the list of hardy table cherries for market. It is very seldom that we find on the fruit stands during the cherry season in Chicago, Cincinnati, Indianapolis, or St. Louis, other than the Early May Cherry; and even this has been sent to market before fully ripe. Now that we have a machine for pitting the cherry, this fruit will be in great demand, both for canning and for drying. There is little danger of over-stocking the market. Let us not stop at one variety, but see what can be done in the way of additions.—D., *in Prairie Farmer.*

Melons at Vineland.—Lord and Wood made the first shipment of watermelons from Vineland, N. J., on August 10th. They shipped one ton to Hill & Tibbets, Boston, Mass.

Internal Revenue Decisions.—The following revenue decisions have been made in reference to producers and dealers in fruit and ornamental trees :

Producers of fruit and ornamental trees may sell them at the place of production without thereby incurring liability to any special tax; and neither the producers nor their authorized agents, delivering and selling such trees at wholesale, *i. e.*, to parties who purchase to sell again, at places other than the place of production, should be required to pay special taxes of any kind therefor. (Sec. 79, par. 32.) This last exemption is limited strictly to the persons, the articles and the manner above named.

Apples for Missouri.—"J. W.," of Trotwood, asks us to publish a list of fruits, especially apples, known to succeed in Missouri. For summer, Red June, Early Harvest, and Red Astrachan; for fall, Maiden's Blush, Rambo, and Pennsylvania Red Streak; for winter, Winesap, Rawle's Janet, and New York Pippin. The Hutchinson Pippin and Fall Bellflower, of Johnson County, Mo., we know very little more about than "J. W." seems to, viz., that their local reputation is first-rate. Our friends in Johnson County would do a good thing if they would send some of their fruit down to the meeting of the State Horticultural. In the report of that meeting, which we expect to publish, "J. W." will get more of the information he seeks.—*St. Louis Journal of Agriculture.*

Peaches.—Mr. W. Flagg in *Journal of Horticulture* thus refers to two little known varieties: "*Magnum Bonum* is a large, handsome, and productive sort, but hardly of first quality, if I may judge from the experience of one season. It ripened here the past season with Morris White."

Hacker's Seedling, as grown at Makanda Jackson County, in this State, is an excellent and handsome variety, but has not been thoroughly tested.

A Good Orchard.—The *Maine Farmer* says of the orchard of Wm. Lombard, of Augusta :

Upon the farm is an orchard of some one hundred and seventy trees, the greater part of them old, but kept in most excellent condition. The grass is kept down around every tree, and the soil stirred nearly the distance to which the top extends. The trees are also mulched, potato-tops, corn-stalks, refuse straw, &c., being used for this purpose. From this orchard in 1865, $613 worth of fruit was sold, and this year, which is not a bearing year, $200 worth. One tree of Tallman Sweets produced six barrels, which sold for $5 per barrel.

Peaches in California.—A correspondent of the *Farmer* says the curl prevails so badly in the peach, that there will be little fruit there (valley of the Sacramento) this year.

Pinus Edulis proves quite hardy at Philadelphia. Mr. E. Hall, of Menard Co., writes as follows to the *Prarie Farmer* concerning it :

"This is a tree of rather wide range in that region. It is about thirty feet high—20 to 50 as to locality. The nut is about the size of a hazlenut. Mr. Bigelow says in his account of the tree, that the seeds are sweet and edible and are used as an article of trade, by the New Mexicans of the upper Rio Grande, with those below, about El Paso; notwithstanding its terebinthinate taste the New Mexicans are very fond of it. It affords in those regions a great part of the food of bears and other wild animals, and as Gov. Arneys says, would be excellent food for swine; it extends north as far as Pike's Peak in latitude 39° and would probably survive the winters here, and if so will be a fine addition to our coniferous ornamentals in the way of variety. It has no particular claim to special beauty; most other pines are of finer forms. The Mexicans call the fruit *Pinones.*"

H. H. Clark of Albion, also says: "It will grow well in this climate, but never can attain great size—not over thirty feet in height. It makes a fine evergreen and the fruit is nutritive, aperient and diuretic."

Catawba Grapes.—A gentleman in Western New York manures his grape vines by burying at the roots, the carcases of dead cats. A decided Cat-awba flavor, he thinks, is thus imparted to the grapes.

FOREIGN INTELLIGENCE.

Varieties in German Vineyards.—The kinds of grape mostly grown in these great vineyards are the Reisling, Traminer, Gut Edelen, Roland Orleans, Clevern, Fleisch, Oestreith From the Reisling variety are made those wines so celebrated and well known throughout the world, such as the Johannisberger, Steinberger, Catinet, Raunthaler, Berg, Liebfraumilch, and Marcobrunner. Very good wines are also made from the Traminer. The Fleisch is a red grape; the Clevern a reddish-purple color, but is more grown in the Palatinate than here. The Gut Edelen and Fleisch have very thin skins, and are only used as table grapes. The Reisling never produces in quantity as much juice as any of the other varieties, but it brings a much larger price. The Oestreith seems to be the general favorite for ordinary wines, and from this grape is made most of the sparkling Hock and Moselle. *Travels on the Rhine.*

Pears in England.—The season has been very hot and dry, in England. Fruit has ripened very early. The *Gardener's Chronicle* says :

"As a proof of the extreme earliness of th present season, it may be worth while noting that Doyenne d'Ete Pears at Chiswick are falling from the trees, quite ripe and fully grown, this day (July 1). This is about ten days earlier than usual. The first ripe fruit last season was gathered on the 13th inst. The produce of this year is of fair average quality, but somewhat more mealy than usual. Other fruits are advanced in like proportion. Apples are falling from the trees in immense quantities, doubtless through excessive dryness at the roots. Fruit crops in general this season will probably be considerably under the average."

Death of the Discoverer of Wardian Cases.—Every gardener knows the "Wardian Case," by the agency of which living plants have been introduced after half circumnavigating the world, and which had defied all efforts to preserve them, until that case was invented. Its inventor, Nathaniel Bagshaw Ward, died on the 4th inst., at St. Leonards, aged 77. He had been Master of the Apothecaries' Company, and one of its Examiners, for which duty he was additionally qualified by his botanical knowledge. He was also a Fellow of the Royal, the Linnean, and other scientific societies, and for forty years vaccinator to the National Vaccine Establishment. He resided successively in Wellclose Square, and Clapham, and in his houses he most strikingly demonstrated how healthfully plants may be cultivated in confined spaces, and in the smoky atmosphere of a city. He published "Observations on the Growth of Plants in Closely-glazed Cases."

Effect of Temperature on the Grape. *J. Pearson*, in *Cottage Gardener*, says: "When I was a boy I remember seeing a vine which was trained across three houses; it was in flower in one house, the grapes were half grown in the second, and quite ripe in the third. I believe it was planted in the middle house and trained right and left, but of this I am not quite sure, nor is it important. These flowers, and green and ripe grapes, all grew on one root, showing, I think, that the temperature of the atmosphere has more effect on a growing vine than the temperature of the soil.

Begonias.—At the Royal Botanic Show, Mr. G. Wheeler exhibited a fine group, comprising Vanden Hecke, Rex, Duchesse de Brabant (in the way of Rex, and better), Miranda, Grandis, Splendida argentea.—Mr. Marcham, gardener to E. Oates, Esq., Hanwell, presented Madame Albert, a fine gray zone, and dark green star-like disc; Secretary Morren, cold silvery gray, suffused with a reddish tinge, the edge purplish red; Grandis, a fine, bold, broad grayish silver zone, olive margin and central olive star; Victor Lemoine, remarkably colored, the prevailing hue a hard, cold, metallic gray, with grayish olive disc, overspread with silver dots—anything or anybody would freeze in front of it on the hottest day; Marshallii, very neat, small, striking, colors bright, consisting of silver and rich green. There was another without a name, and if Mr. Marcham will forward the name, we shall esteem the favor, as it happens to be a particularly good one; the leaf is large, the disc blackish green, with reddish veins, the zone narrow and broken, very silvery, the margin blackish green.

Fuchsia coccinea in Native Woods.—Dr. Cunningham, writing from the Straits of Magellan to Dr. Hooker, says: At Port Famine he saw for the first time Fuchsia coccinea wild, and he thought he had seldom seen a more beautiful sight than was presented by these plants, which were from eight to twelve feet high and thick with flowers.

THE AMERICAN AGAVE.—The following is the mode adopted for the extraction of the juice of the Maguey plant, and for the manufacturing from it of pulque, which denomination dates from the time of the Spanish occupation of Mexico, the derivation of the word appearing to be totally unknown; the beverage being known under the denomination of "neutli" "in the time of the Aztecs." So soon as the leaves begin to turn yellow, a small concave aperture is scooped out by means of a keen-edged knife in the core of the plant, which is usually about 18 to 20 centimetres in diameter, and this aperture is gently scraped round, care being taken that no incision be made in the leaves or fibres around it, for fear of imparting a bad taste to the juice. This operation produces a sediment, through which the juice, generally known under the technical name of "aqua miel," or honey water, exudes from the grooves of the plant, which juice is extracted by the Maguey laborer by means of an elongated gourd formed into a tube, the air in which is exhausted by suction, and which he thrusts into the incision in the core of the plant, stopping the aperture at one end with his finger, and emptying its contents into his "zurron," a sort of impervious sheepskin bag inserted in a net and strapped to his back. Each laborer has usually the care of from 50 to 60 plants, from which he extracts from about 110 to 120 arrobas of honey water per week. As soon as his "zurron" is full, he carries it to the "tinical" or pulque manufactory, very commonly returning to each plant and performing the same operation of scooping round the incision and exhausting the juice it contains twice in the day, taking particular care to cover up the aperture with leaves and stones, lest the cattle, dogs, or "caygottes," a small species of jackal which infests the country in large numbers, should get at the juice.

"As we have before seen, the honey water varies in quantity, color, and quality, according to the species (variety) of the plant, the producing time of which may be said to extend on an average to about three months, although some sorts only yield juice during a period of twenty days, and other sorts are so exuberant that they yield it during six months, and that in large quantities. The average quantity yielded by each plant, one with another, may be roughly estimated at about 100 arrobas.

"The pulque manufactories of the different Maguey plantations consist of a long covered-in gallery, well ventilated, and containing rows of vats made of bullocks' hides stretched over a modern framework, and smeared over with lime on the outside, into which the honey water is emptied so soon as it is brought in from the plantations, and which, in about thirty-six hours begins to ferment, casting up large bubbles of froth, losing its pristine transparent color, and assuming a milky whitish tint which it permanently retains. It was formerly the habit to throw lime, or a plant called "Ocgractli" into the honey water, in order to produce a greater degree of fermentation; but now, a small quantity of "maduc del pulque," or pulque already manufactured, is poured into the empty vats, which quickly deposits a thick and whitish colored sediment, upon which the new juice or honey water is thrown in. The mixture after fermentation being ready for use, is then sent off to the City of Mexico, Puebla, or the nearest market, the pulque very commonly undergoing a considerable dilution of water by the way at the hands of the carriers, who convey it in sheepskin bags upon mules or donkeys. The quantity of it which thus annually enters the City of Mexico alone may be estimated on the average to be about 2,000,000 arrobas, and that which enters Puebla to be about 500,000 arrobas, and the cost of transport alone has been calculated, taking the approximate average of 1 real as that of each arroba, to represent the sum of 312,000 dollars; not less than 20,000 mules and donkeys laden with the beverage entering the city every month by the gate leading to the Maguey districts. To the quantity paying duty must also be added a considerable quantity which is smuggled in, and including this it may be calculated that about 50,000,000 bottles are now annually introduced into the City of Mexico, Humboldt having fixed the number at 44,000,000; and the amount of money annually expended in the drink, at the average rate of about a quarter of a real per bottle, to be about 1,600,000 dollars annually.—*Gardeners' Chronicle.*

PRICES OF ORCHIDS,—At the sale of Orchids forming the collection of the late J. A. Turner, Esq., of Pendlebury House, Manchester, on the

2d, 3d and 4th inst., the biddings which the auctioneer, Mr. Stevens, of King Street, Covent Garden, obtained, amounted to £2,824. The following are some of the prices realized:—Odontoglossum nævium majus was knocked down to Messrs. Veitch for £55, and the same firm purchased a fine plant of Cymbidium eburneum for £15 10*s.*; one of Aerides Schroderi for £30; Dendrochilum filiforme, £5 10*s.*; and Saccolabium guttatum giganteum, £72 9*s.* Mr. Williams, of Holloway, was likewise an extensive buyer, giving for Aerides nobile, £13; Oncidium Lanceanum, £6 6*s.*; Cœlogyne pandurata, £7 10*s.*; Anguloa Ruckeri, £8; Angræcum caudatum, £17; Phalænopsis grandiflora, £9; Aerides odoratum purpurascens and Lælia gigantea, £14 each; Cypripedium barbatum giganteum, £10 10*s.*; Lælia elegans, £19; and Cattleya Mossiæ magnifica, £20. Among private buyers, S. Mendel, Esq., who was an extensive purchaser, gave for a young plant of Vanda Lowii, £23; for a fine Aerides Fieldingii, £34; Saccolabium præmorsum, £10; Lælia elegans, £13; Aerides Lindleyanum, £11 11*s.*; Dendrobium Falconeri, £24; Aerides Farmeri, £17 6*s.*; Aerides Schroderi, £55; A. cylindricum, £17; Cattleya labiata purpurea, £31 10*s.*; Saccolabium ampullaceum, a superb specimen, £40; S. retusum, £23 2*s.*; S. præmorsum, £13; and Cypripedium caudatum giganteum, £14.—*London Journal of Horticulture.*

ON THE PALM TREES OF OLD CALABAR.—Extracted from the MS. Journals of the late Mr. W. Grant Milne. By Mr. Sadler. The Ata ukot Wine Palm or common Mimbo, is apparently an undescribed species of Raphia. It yields a very pleasant beverage, which is much appreciated by all classes of people who have the fortune, or rather misfortune, to touch the Western shores of Africa. It has been cultivated by the natives for ages, for its watery fountain. The trees are generally seven years old before they are tapped. At this age they are from 30 to 40 feet in height. The natives ascend the trees, and pierce a hole to the centre of the stem immediately below the growing point; a small pipe is then inserted into the hole and led into a vessel which is fixed to the tree. In this way it is drained from time to time, which causes the tree to die, and it is then cut down to make room for others. The mimbo thrives best in damp situations, and such localities are generally chosen for its cultivation; at the same time, I have seen avenues of mimbo trees on high sandy places leading to towns. The people employed to tap the mimbo are Ebebo slaves, which are purchased by kings and chiefs at public slave marts. The Calabarians are not a climbing race. The Eheboes are in practice superior in the art of "speeling." The liquid, when taken from the tree, has somewhat the color of cream, and has a pleasant sweetish taste. This only lasts a few hours, when it becomes tartish. The natives have certain barks which they bruise and mix with the liquid, which renders it intoxicating. It is sold in the public markets; and in the Ebebo country there are mimbo public houses, similar to our beer shops. It is used by the missionaries' wives for making bread, being very subject to fermentation; the bread made with it is excellent. The young leaves of the plant are split up into threads and made into fine bags. 2. The Iya, or Bamboo Palms, is another species of the same genus (Raphia). Its petioles are used for house building at Calabar, and all along the coast. These petioles are generally from 20 to 30 feet long. The fruit is used as an article of food, which is not the case with the last named species. Many of the trees are from 50 to 60 feet high. In the Uwet country the natives do not cultivate the Wine Palm, consequently they tap the Bamboo; but the wine is strong and harsh and unpleasant, and is very intoxicating. I once saw the king of Uwet as tipsy from its effects as any man under the influence of brandy. The inland kings and chiefs indulge themselves to excess in drinking Bamboo wine, and consequently are always in a state of stupidity. The tree is tapped in the same way as the mimbo, at the base of the growing point. In the Qua country, at the foot of the Qua mountains, they use the wine of the Oil Palm (Elais guineensis), which is inferior to that of the Bamboo, being much harsher and stronger. In this case the trees are tapped about two feet from the ground, in the same way as already described. I never saw any of the natives intoxicated by this wretched fruit, but I have no doubt that they can supply ingredients to it for this purpose. Another species is the Afea oku ukot, or the white rod mimbo. The petioles of this Palm are white, while that of the Ata ukot are red. Its wine is equal in quality to that of the Ata ukot. The scales of the fruit are, however, much thicker than those of that species and the Bamboo. The Idim ibum is perhaps the most important Palm of all at Calabar. Idim signifies water, and ibum great. It occurs on the banks of the main branch of the Calabar river, but confined to the district of Ikoriofiong. The quantity of wine which this plant produces is astonishing. An ordinary tree will yield a puncheon of a most delicious beverage, which is deservedly a great favorite with the people. In color it resembles cream, which is sold in large quantities at the mimbo public houses. When the tree is once tapped it invariably bleeds itself to death. This is not the case with common mimbo ; it can be tapped from time to time till the fluid is exhausted, and then it dies.

Such is also the case with Idim ibum, the Iya or Bamboo, the Afea oku ukot, and the Oil Palm. The last of this class of Palms, belonging to Raphia, met with at Calabar, is the Iya asiakia nditto, which signifies children. The base of the fruit is surrounded by numerous scales similar to those produced at the base of bulbiferous plants--these are called by the natives children. This Palm is not common. Another nearly allied species which is plentiful upon the south coast, sends up numerous shoots, similar to the plantain, covering a great space of ground, On the south coast a species of Date is abundant on the sea shore, but not inland. The fruit is small, and of an oval shape. In taste the pulp is similar to that of the Date of commerce. Its foliage also resembles that of the common Date, and might easily be mistaken for it were it not for the fruit. A fan Palm is plentiful at Citia Camma, but I have not seen the plant, never having been so far south. Captain Kirkwood has two plants raised from seed collected at Citia Camma, where he states it is abundant.—*Proceedings Bot. Soc. Edinburg.*

Gardener's and Estate Servants in England.—The quantity looking for places is enormous. The following advertisement appeared in the *Daily Telegraph and Lloyd's News*, London, under the head "Wanted:"—

"Lodge Keeper. Wages 30*s*. A married man—small family not objected to—good character indispensable.—Enclose stamp to B. C., Post Office, Chichester. 1500 letters were received in response.

English Parks.—Liverpool is well provided with Public Parks, the Corporation having adopted arrangements by which the town has been surrounded by a cordon of these health-recruiting spots. At the extreme north is the Stanley Park, 160 acres in extent, purchased of the Earl of Derby, and now being laid out by Mr. Kemp. Shiel Park, named after a member of the Council, has been completed ; and then follow on the east the Newsham House Park, the Wavertree Park, and the Botanical Gardens. To the south-east is the Prince's Park, provided by the munificence of the late Mr. R. V. Yates ; and near this comes in the Sefton Park, the competition of designs for laying out which we have recently noticed. Our contemporary, the *Builder*, has published a good birds-eye view of the proposed arrangements for this latter, and sketches of some of the residences and other erections, which seem commodious and tasteful. Of the 400 acres of which the Park consists, 113 are devoted to building sites ; 19 to a Botanical Garden, 14 to water, and 64 to roads and drives, leaving 190 to be planted and laid out in walks, &c. The staking out of the roads and drives is being rapidly proceeded with. We notice that our contemporary, like many others perhaps who are not familiar with the subject, fails to distinguish between what is called "gardening" and "landscape gardening," for he speaks of Mr. Nesfield, to whom the competition designs were referred, as "the distinguished metropolitan gardener"—a title under which, we apprehend, he would fail to recognize himself. The truth is that gardening and landscape gardening, though occasionally and to varying degrees carried out by the same individual, are really and essentially distinct, the one being devoted to the culture of plants for use or ornament, the other entirely to the creation of tasteful and beautiful scenery—in a word, to the disposition of the ground, and the arrangement of the living materials by which it is decorated, which latter it is the gardener's business to tend with a loving hand.—*Gardener's Chronicle.*

Grape Bloom.—What is this? Whence comes it—from the substance of the Grape inside, or is it formed on the outside? Has it any flavor? Is it any test of quality? Is it a secretion or a parasite? Does it tend to keep or decompose fruit? What influence has aqueous vapor, or heat or cold, on its formation? Is there any known reason for its varied colors. *Beta.* [The bloom is a secretion or exudation, of a waxy nature, formed in the cells of the epidermis covering the berry. We should be glad to have the opinions of some of our practical correspondents on the other questions raised in this letter.]—*Gardener's Chronicle.*

Albizzia Anthelmintica—A new Vermifuge.—Wars, with all their evils, are usually productive of some new scientific truths. The English expedition to Abyssinia found the native scourged by a terrible worm called *Tænia Sotium.* But the Bark of the *Albizzia*, powdered, and mixed with honey or oil, in doses of from two to four ounces, was found to be a popular and successful specific. The natives call the plant Bessana, and it belongs nearly to acacia, from a species of which the gum arabic is formed.

Tussack Grass.–This famous grass of Buenos Ayres and Montevideo, which a few years ago excited so much attention in Europe, Dr. Cunningham, in a recent letter to Dr. Hooker, says, is in a fair way of being extirpated, it having been destroyed in most parts of the island (Falkland) by the cattle, which eat it and trample it down in order to get at the sweet, esculent base of the stem, and that it is now almost exclusively limited to the small islands and low rocky points close to the sea.

The Dragon Tree.—The giant specimen of the *Dracæna Draco* growing at Orotova, in the island of Teneriffe, was destroyed last autumn in a gale of wind. This tree was first brought into general notice by Humboldt, about 60 years ago, when he computed it to be 6,000 years old.

The intended sale of the Chateau Lafitte vineyards has set the people gossipping on wine, and the following facts are related in contradiction of the proverb that wine improves by keeping. M. de St. Arnaud states that he was on a visit in 1834 to Chateau Lafitte, when claret of 1798, a vintage held in high repute during the Directory, and which was drank as late as 1830, was put on the table. Its flavor was almost gone and the wine was pronounced worthless. A specimen of the famous comet year of 1811. was declared to be degenerated, but still was drinkable.

The wine *par excellence* which was pronounced perfect was some of 1819, which had been ten years in wood and five years in bottle—therefore in 1834 it was fifteen years old. This, it appears, is the precise age at which superior claret should be drank.

New Ivy Leaved Pelargoniums.—Some new hybrids of an interesting character were shown by Mr. J. Wills, of the Ashburnham Park Nursery, Chelsea. The mauve-colored Ivy-leaved Pelargonium peltatum elegans, was the seed parent: the pollen parent, an intense scarlet-flowering zonal variety, named Banner. For 16 years Mr. Wills had labored to effect this cross, and had operated on many thousands of flowers without success, until within two years. The hybrids partake of the Ivy-leaved habit, but are much more compact in growth, with firm stout leaves, while the flowers, some of which are of a bright magenta hue, have also improved in shape and substance. Mr. Wills is still further operating on the new forms he has created, and hopes to obtain a distinct class of Pelargoniums.—*Cottage Gardener.*

Hybrid Tropæolums.—The first attempt was made by crossing the old T. Lobbianum Crystal Palace Scarlet, with a good form of the ordinary Tom Thumb scarlet. Some plants of this popular variety occasionally come more compact in the habit than is usually seen, and there is sometimes allied with this a greater preponderance of scarlet over orange in the flowers. From the first experiment in cross-breeding came T. compactum coccineum, which showed a manifest contraction of the habit of the one parent, and a greater infusion of scarlet into the flowers of the Lobbianum parent. The color of flowers is a very rich hue, and they also retained the Lobbianum shape. By crossing the new variety with a yellow flowering seedling, T. compactum luteum was produced, the flowers being yellow and spotted with pale amber. This was a weakly growing variety, though it flowered profusely, but it required greater vigor in the habit. With this also came a seedling posessing a shade of crimson deeper and richer than any form of the crimson Tom Thumb that had been seen. This proved a useful variety to seed from.

The next batch of seedlings produced several varieties of considerable promise, a few of which were distributed during the past spring. The more noticeable were Luteum-improved, a consideable advance on Luteum. the habit much stronger, the flowers larger, the color golden yellow, the spots on the lower part of the flower crimson, on the upper part amber. This is a very striking effective kind for ribbon borders.

King of Spots, bright yellow with bright amber spots, dwarf-growing and very free blooming; in damp and sunless weather the flowers will come heavily suffused with amber, though it is by no means unattractive in that character ; King of Scarlets, a somewhat dullish hue of cerise scarlet, a very dwarf-growing variety that blooms rotusely, and is very suitable for small beds; Scarlet Gem, in character very like the foregoing, but having more orange, but a very indifferent grower; the color is very bright, and it also blooms freely. Both of these partake of the nature of the Lobbianum varieties in regard to the build of the flowers rather than to the Tom Thumb character, like Luteum-improved, King of Spots, and others; and they appear in consequence, apparently to lack vigor of constitution. Another variety, named The Moor, is of a very compact habit, but yet robust growing; the color rich velvety maroon of a bright shade, the upper part of the throat pencilled with black. The color is very showy, but this, and King of Spots also, buries its flowers as it were beneath the surrounding leaves to a great extent. Mr. George has readily acknowledged this defect, and his seedlings of the present year actually show considerable improvement in this respect. From a goodly umben of theser Mr. George selected the following, the most of which will probably be sent out next spring: Orange Perfection, rich bright orange, very showy, habit compact and dwarf, and free blooming: a striking shade of color for bedding purposes. A bright crimson scarlet, as yet unnamed; this Mr. G. Smith, of Islington will distribute; it is a good strong growing and yet compact variety, very free blooming, but on the seedling plants the flowers show a tendency to come crumpled.

Le Grand; this I take to be an improvement on the foregoing, though the hue of the color plainly differs, as it has more orange and less of crimson, and there is the presence also of a strong dash of purple; the flowers are large and very smooth, and the habit all that could be desired. This is the best variety yet raised by Mr. George.

Scarlet Perfection is in the way of Le Grand, though there is a clearly perceptible difference in the hue of color; the flowers are smaller, but it is an astonishingly free bloomer, and very showy.—Report of George's experiments in *Gardeners' Chronicle.*

Three New European Strawberries.—Mr. D. Jonghe says in the *Gardeners Chronicle.* To some of my best seedlings I gave the name President Wilder, to another Charles Downing, and to a third Ferdinand Gloede.

Of the first of these three, in 1867, I wrote as follows:—" In the stalks of the leaves and of the fruits the growth and development of this variety offer greater consistency than in La Constante; its constitution is hardy in all seasons. The hairs on its surface are rather inconspicuous, and all directed upwards (*direction ascensionelle,*) a point which must not be overlooked." The fruit is nearly conical, but when full sized it becomes more oval. The seeds are abundant and rather large, arranged in symmetrical order on the surface. The skin is of a deep cherry color, very shining, like that of a chestnut. The flesh is firm, juicy, and of a brisk and *releve* flavor. The name was given in honor of Marshall P. Wilder of Boston, known for half a century as a promoter of horticulture in the United States, and for eighteen years President of a Pomological Committee. The fruit in question is a fine type of Strawberry, and, so far as habit of plant and beauty of berries are concerned, eclipses La Constante. A plate of the fruit produces a splendid effect, either on the dessert-table or at an exhibition.

The second of our select varieties is dedicated to Mr. Charles Downing, whose name is generally known from his having published the work of his brother, A. J. Downing, revised, corrected, and completed, under the title, " Fruits and Fruit-trees cultivated in America." Here are the remarks relating to this Strawberry:—" There is considerable firmness in the leaf-stalks and flower-stalks; the runners (*filets des tolons*) are likewise short and firm. The plant has a compact habit. Its constitution is hardy in all seasons. The divisions of the leaves are broad, flat, deeply serrated, of a deep somewhat dull green color, like those of the parent plant. The hairs are not numerous, and spread horizontally. The fruit is abundant, larger, and of a regular rounded conical form. In color it is usually of a pale cherry tint, not very shiny. The seeds, of a deep yellow color, are on the surface (not imbedded). The flesh is white, a little flesh-colored, very juicy, sugary, vinous, and with a very delicate *arriere gout.* In this last particular this variety will perhaps be the best of the series."

The third variety is dedicated to M. Gloede, now of Beauvais, well-known for his success in the cultivation of Strawberries, and for the efforts he has made to distribute the best varieties in cultivation. The variety is in every respect an improvement upon its parent. It has more vigor, with as much firmness in the leaf and fruit stalks. The leaf, of a deep green color and shining surface, is large, its lobes rounded

with broad and deep serratures. The hairs are very abundant, and spread horizontally. The floral scape, very firm, about 5 or 6 centimetres long, is developed upon a yearling plant, and bears seven to nine flowers, which set well as soon as the corolla opens. The fruits, at first conical, become round, and subsequently elongated. As soon as the berries have attained half their dimensions they assume a reddish-brown color. When ripe the color is of a deep shiny red. The seeds are abundant, and placed in pits, so as to be almost flush with the surface of the fruit, and are of a clear coffee color. The fruit, which is generally large, has the flesh compact, white, filled with sugary vinous juice, with a brisk *arriere gout.*

Styles of Bouquets.—Covent Garden bouquets are usually made with one grand centre flower. The makers tie a long piece of thread to the stem of this flower, and then fix all the other flowers around it in circles, or they use single stemless flowers and wire, mixed with moss, according to the Parisian fashion; but Spanish rushes are the best—they are much superior to wire.

The rush most in request among French flower girls is a species of *Juncus*, remarkable for its closeness; it is tough, when dried, and quite stiff. All these rushes come from Spain, and with them and stalkless blossoms a bouquet-maker will in a very few moments construct a pretty nosegay. Say lilac is the flower about to be arranged: Take a rush, double it, put the flowers at the point of doubling and secure it with thread; then give it a necklace of moss, fastened by the same, and turn the thread round the rush, fasten it off, and dip the so ornamented stalk in water.

The moist moss will keep the flower fresh. Proceed in the same way with other blossoms until you get all the colors you require, then bind them all together, and few persons will imagine that your exquisite bouquet is composed of flowers which an ordinary English flower girl would have thrown under her board. One advantage in these rush made bouquets is that the stem is so fine. You get a large bouquet, ten inches in diameter, and a handle to it about the size of your finger; were the flowers on their own hook or handle the affair would be very bulky.

Every person who attempts to fix a bouquet ought to have an eye for color. It is now an established fact, that those colors called " complimentary," look better than the ones said to " harmonize" with each other do, in a nosegay; so place blues with the orange, and yellows with the violet; let white divide disaffected hues, and above all things give to whites and reds lots of foliage.

The following is a good rule tor finding the contrast of any color: " Cut out a circular piece of the petal of any flower and put it on white paper, look at it fixedly for a few seconds with one eye, then look off the color on a white piece of paper and you will see a bright ring of another color; that ring or circle is the right complimentary color or contrast to the color in the petal.

Red will harmonize with orange, but green is the contrast to red; a rose surrounded with moss or leaves looks better than it would placed next to a yellow calceolaria. Follow " nature" as closely as possible in your arrangement of colors, and you cannot fail to produce a good effect. Study nature's blending, and copy it when you make up your bouquets. Did you ever see a fair girl who understood color in an orange dress, or a dark one in blue? I feel quite vexed at times to witness the entire disregard of color shown by some women, and more especially to see how they carry the most unsuitable bouquets—why, the bouquets ought to match the dress.

A Camellia alba is a nice centre flower for a bouquet encircled with heliotropes, red rosebuds, white heath and blue violets. The following is the arrangement for a " winter" Paris nosegay: Centre Camellia: 1st circle, heliotropes; 2d, red rosebuds half open; 3d, white heath, in spikes; 4th, red pinks; 5th, blue violets; 6th, red rosebuds again; and 7th, white heath, in spikes.

The French six-quartered bouquets, which were fashionable some years since, were made in two colors, and were very formal. Fern leaves, parsley, and carrot leaves are very largely used in France; they are elegant and graceful looking, and that is the chief point, and not the costliness of the things; but parsley has one objectionable quality, it has a strong, and to some people, disagreeable smell.

Some bouquets are made made by enclosing the large flowers in a circle of small ones. Take for instance, a white rose and secure, with rush and string, a circle of blue *Gentiana acaulis* around it, then take another white flower, and encircle it with pink blossoms, a third with red a fourth with yellow, and so on, taking care when you put all the centres together in your bouquet that you do not disarrange the different circles. I do not like this style any more than I do the six quartered—they are both formal.—*English Paper.*

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

Meeting July 21st.

This was rather above the average of interest for our July show, which is usually dull. The best collection of plants in pots was awarded to James McDonald, gardener to Matthew Baird, Esq.; second best to Donald McQueen, gardener to Joshua Longstreth. There were the usual well grown specimens of these exhibitors, but contained nothing new. Best Hanging Baskets and best collection of Cut Flowers, to Gebhard Huster, gardener to J. B. Heyl, Esq. Best collection of improved Hollyhocks, Thomas Meehan. A special premium to W. Kelley, gardener to L. R. Starr, for a collection of well grown plants. Also to Robert Buist, for one of the finest collections of Gloxinias ever exhibited; also, for the doub. scarlet Geranium, *Surpasse*, *GloriedeNancy*, which was finely in bloom. Mr. B. had also three beautiful Gladioluses—Sir Isaac Newton, Shakspeare and Mary of Cambridge. Mr. Earle had also a very fine collection, which was very much admired. He spares no expense to get all the new kinds, and we have often to get our first view of the best novelties from his collection. He had also fine Hollyhocks.

One of the most interesting things, was a collection of Double Chinese Pinks, from Mr. J. P. Dunn. They were as large and as double as the old Scotch Pink, of a great variety of pencillings and colors. They were sown in a hot-bed in spring, and Mr. D. says will flower all summer. They attracted much attention as a good summer bedder, and a special premium was awarded them.

Of Raspberries, the Committee had difficulty in awarding the premium for the best quart. All the large and fine looking berries were deficient in flavor. The Red Antwerps of J. McDonald, gardener to M. Baird, Esq., were not much smaller than any of the newer kinds, and being the best flavored of all, were awarded the premium. The best collection was awarded to James MacGowan, who had six varieties. Special premiums were awarded to Anthony Felton, for a promising seedling, and to D. W. Herstine, who also had three, which impressed the Committee favorably. Mr. Parry had a fine dish of the Clarke, which received the favorable notice from the Committee.

Mr. Williams, gardener to Mr. Harrison, had one of the best pot plants of Hamburg grape in fruit ever exhibited.

Mr. Parry's Wilson Early Blackberries excited marked attention, they were larger than any Lawton's in the room, and much better flavored. They received a special premium. Of Currants, the heaviest competition was between Red Dutch and Victoria, in favor of the latter, by Mr. McDonald. Usually the Red Dutch would beat it, but this season the currant crop is very poor here, the first time in many years. The vegetable table was interesting from a peck of remarkably fine early Rose Potatoes from Anthony Felton. The same exhibitor had a like quantity of Early Goodrich, of about the same size. He said the Rose was ten days earlier than the Goodrich, and on the equal size of the latter, planted the same day, being pointed out to him, explained that the lot of Rose Potatoes was the sole produce of three hills, while the Goodrich was the selection of as many bushels. The enthusiasm to get the Early Rose is so great that we must make much allowance for spirited reports of experiments for some time to come, but for all this, we have no doubt the Early Rose is a really desirable novelty.

THE TENNESSEE HORTICULTURAL SOCIETY.

By Tennessee papers we notice with much pleasure, that the Horticultural Society of that State is highly prosperous, and doing good work.

We see that they propose to hold a grand autumnal exhibition on the 22d, 23d and 24th of September, at Nashville. Premiums to the amount of several hundreds of dollars are offered.

We hope friends who can send anything to this exhibition will do so, for this effort of our Tennessee friends is worthy of every encouragement. Schedules may be had of Fred. H. French, Esq., Corresponding Secretary, Nashville, Tennessee.

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HINTS FOR OCTOBER.

FLOWER GARDEN AND PLEASURE GROUND.

A story is told of a political speaker, who long had got his speeches by heart, and who told the same tale wherever he went, that a waggish friend with a good memory, and who had detected the secret of the famous orator's eloquence, undertook to speak at the same meeting, and repeated substantially what was to be said by the succeeding speaker—the "orator of the day." When the great orator's turn came he had nothing to say. The old story had already been better told, and this was all he knew.

Now as every month comes around year by year, it seems to us as if it ought to be the same story. If what we told last year was true, what more can we say this? But reader, it is the same with good gardening as with a good sermon, it will bring out a thousand good things from the same old text. How many times has the question been asked "do men gather figs from thistles?" and how often have we not heard the most varied and novel answers, and yet all meeting our cordial assent; and so good reader bear with us, and if you think that you have already read "hints for October," we will try not to be in the fix of the peripatetic politician aforesaid, but rather like the good minister, and tell you something new about the old thing. For our part we are always learning something new. We remember how but a few years ago, we had to wait until the fall of the leaf, before we could plant anything; and how we had to hurry it over, as it was a settled maxim with the best practical gardeners not to plant anything after November. Now we do not wait for the fall of the leaf, but find the best effects are obtained by planting before. This we have however said before,—"the novelty is that every year's experience confirms the fact." It is, however, more certain every year, that trees fall planted should be well pruned at the time. The small twiggy branches should all be shortened-in especially of soft wooded trees, or of hard wooded trees which have few fibres, such as oaks, tulip trees, willows, poplars, etc. Another useful fact learned the few past years is, that many young things can be set out in fall to better advantage than in spring, if they are entirely covered with earth. It has long been known that cuttings of most things do better taken off in fall, if they can be protected through winter—young plants follow the same rules.

A young tree transplanted is indeed partly in the same condition. It has to make new roots before it can grow, and the same law which favors the production of roots in a shoot with no roots, acts with equal force on shoots which have already a few,—and talking of protection, plant evergreens for warmth, and fast growing deciduous trees, alders, poplars, willows and such like, freely for windbreakers. Some may argue, and truly show, that some of your tender trees will die for all, which is quite likely; for a man may die of gout or some other complaint, no matter how warmly he may be clothed, or otherwise protected from freezing. Still warm garments do good, and so do warm trees and protections.

Planting suggests arrangement; and how much that is novel might be said on this point! We have "Principles of Landscape Gardening," published continually. Such works are in every well ordered library. But true taste we seldom see. The fact is, true taste is a native tact. A lady might read about art all her life, and yet never arrange a tasteful bonnet; while one who knows nothing of the whys and wherefores will turn out the elegant thing at any time. If people were to try more what they could do with their little door yards and gardens, we should soon see some pretty styles. If only people could be made to understand how cheaply gardens could be made pretty, we should have millions of beauties, where we have now but a few score. The trouble is that so many think art and taste means expense. True it can be made to cost, but this is by no means essential.

In planting for instance, if we have not money to spare to buy good nursery trees or plants, get them from the woods. They will grow as well, if they are more severely pruned than nursery trees. That is the whole secret. The Kalmia and other trees supposed to be hard to move from their native places, grow beautifully if one-half or two-thirds be cut away. If taken from a shaded wood it may also be necessary to shade a little gradually from hot sun. Rare trees will always of course please more than common things. Idealists may preach as they may. They may tell us that beauty is beauty wherever seen, and rail against foreign rarities, when there are things at home as pretty as they. But somehow familiarty breeds contempt; and beauty which is seldom seen is admired the most. Granted that it should not be so, but yet so it is, and facts are what we deal with.

One great want of American gardening is good roads in winter. It is next to impossible to have them of gravel or other material without great expense. In many suburban places it is now customary not to spend much on foot paths, filling up with sand or any light material which will make good walking for ordinary weather, and to depend on board walks, or permanent paved ways for wet times.

Tender flower roots should not be left out too long.

Dahlias, Gladiolus, Tuberoses, and other plants that require winter protection for their roots in cellars, should be taken up at once on their leaves getting injured by the first white frosts. The two latter should be pretty well dried before storing away, for they may rot. Dahlias may be put away at once.

Chrysanthemums now in flower should have their names and colors rectified, against the time when in spring they may have to be replanted, when they can be re-arranged with accuracy and satisfaction, according to the owner's taste.

Few things are more valued in winter than a bunch of Sweet Violets. A few may now be potted, and they will flower in the window toward spring; or a small bed of them may be made in a frame, which should be protected by a mat from severe frost To have Pansies flower early and profusely in spring, they may be planted out in a frame, as recommended for the Violet.

Many kinds of hardy annuals flower much better next spring, when sown at this season of the year. A warm, rich border should be chosen, and the seed put in at once. Early in spring they must be transplanted to the desired position in the flower-border.

GREENHOUSE.

Bulbs for flowering in pots should be planted at once. Four or five-inch pots are suitable. One Hyacinth and about three Tulips are sufficient for each. After potting, plunge the pots over their rims in sand under the greenhouse stage, letting them remain there until the pots have become well filled with roots, before bringing them on to the shelves to force.

Where many flowers are desired for bouquets in winter, a good stock of such as flower easily should be provided, especially of white flowering kinds, without a good sprinkling of which a bouquet has but a very common-place look. Deutzia gracilis and D. scabra, Philadelphuses, and Tamarix are very good hardy plants to pot for winter-flowering. The Iberis sempervirens is also a splendid white to force for its white flowers. Lopezia rosea is nearly indispensable for giving a light, airy gracefulness to a bouquet; and Camellias and Azaleas cannot possibly be done without.

Many kinds of annuals also come well into play amongst other things, Phlox Drummondii, Sweet Alyssum, Collinsia bicolor, Schizanthuses, Mignonette, and Nemophila are essential.

There are but few things in the greenhouse that will require special treatment at this time. Camellias and Azaleas, as they cease to grow, will require less water; but it is now so well known that moisture is favorable to growtht, and comparative dryness favorable to flowering that we need do no more than refer to the fact.

FRUIT GARDEN.

The past season generaly has not been favorable for fruit growing. Grapes however appear abundant, selling last month at Cincinnati for about 10 cents per pound, and we hear the crops well spoken of everywhere. The dry weather has been a benefit to the vine--wet roots in fact are unfavorable to any fruit. Always keep the roots as near the surface as possible; and in any system of cultivation, aim at keeping the roots well up. In

Europe the best grape growers so appreciate this, that it is a very common thing to concrete the bottom of a vine border in order to keep the roots from going down; and some of the healthiest trees we ever saw were planted on the ground, and the earth drawn up in a mound about them.

Our teachings have been so well followed, that we now find orchards of apple and pear every where in grass. The only fear is that people will starve the trees under this system. Now is the time to attend to this. Trees in grass should have a half inch of road sand, coal ashes, kitchen rubbish, or any such stuff, spread on the surface over their roots every other year or so. Pear trees especially are wonderfully improved by this method. We were much interested on the grounds of Mr. John Dick, recently in two large Seckel pear trees, which grew where he had to pile up his annual heaps of tan for winter use. They were clothed with healthy foliage and magnificent pears. All around in his neighbor's cleanly cultivated gardens, pears had no leaves on after August, and of course unripe and worthless pears. There is no peculiar merit in tan—any thing which will keep roots near the surface will keep them healthy; and healthy roots make healthy trees.

There is considerable art in raising fruit; but there is as much or more in gathering and ripening them. Pears and apples are ready as soon as the seeds begin to turn black, or as soon as they will part easily from the tree by gently raising the stalk, or as soon as the leaves show indications of falling from the trees; indeed, whether they are fully ripe or not, no length of time will avail them aught after the leaves fall. No rules can be given for the exact place to put them away in, but the principle must be applied to each individual case. Of course, they must be handpicked from the tree, as the slightest bruise causes decay. The stock must be occasionally overhauled anyhow to take out such as will be found, from various accidents, in a decaying state. Apples, for commercial purposes, are usually barrelled-up, with chaff or other light substance betwen each layer; and some pears, such as Lawrence, will bear the same treatment; but such preserved fruit are never equal in quality to those preserved in a more open way on shelves.

COMMUNICATIONS.

NOTES ON DIONŒA MUSCIPULA.

BY "OLDCASTLE," GENEVA, N. Y.

No doubt many of your readers were as deeply interested as I was in Mr. Canby's notes on *Dionœa Muscipula*, in your August number. Having nothing to add by way of *information* on the subject, I would not venture to trespass upon your space, did I not feel that there is offered here a field for most curious and valuable investigation. The conclusion in the article alluded to seems to be that the insects and other things inclosed in the leaf were not only dissolved, but *digested* by the plant, serving it as *nutriment*. I wish Mr. C. had told us whether the plants experimented on, manifested any signs of extra nourishment in a stronger or more thrifty growth. From my limited knowledge of this class, I supposed that plants often grew with as full health and vigor in places and circumstances which would preclude such nourishment to any appreciable extent, as they do in their own native swamps.

It is also known that the curious leaf-trap of the Dionœa will close as sensitively upon a pin-head or a small stone, as upon the unfortunate insect, which shows at least that there is no power to distinguish between objects that can afford nutriment and those that cannot. The subject seems to me to raise a most interesting question in the economy of nature. If the curious mechanism of this wonderful plant is a means for supplying it with food, what a beautiful illustration it gives us of that bountiful Providence that gives even to these very lowest of organisms his most beneficent and watchful care; if there is no nutriment afforded, but the destruction of the animal is all that is accomplished—what an interesting provision we have for performing its little share in preserving the balance of insect life.

A recent English writer poetically says, in this connection—"Our world is flooded with vitality in innumerable forms, and 'the reaper whose name is death' uses weapons of different kinds to cut the strings of life in every form which it assumes; and having fluttered through a life-time—the length of a summer's day—is it not better for the little fly or moth to expire in a cup of nectar, or in the arms of a tiny flower, than to die by disease or starvation !"

We shall await with much interest the results of Mr. Darwin's experiments and observations in this connection. Meanwhile, as the true student of nature finds ever a deep increasing enthusiasm as leaf after leaf of mystery is turned before him, let us press on for more light, knowing that every new revelation may but deepen our trust and faith in the all-wise, all-good, all-loving Providence, who is the guide and father of all.

[Mr. Canby is again travelling through the South, and will, no doubt, gather together more interesting facts, in relation to this curious matter. In regard to the " stone objection," the digestive organs of any animal will close as sensitively over a cherry stone or any other matter, as well as upon the best of food, showing also that it has no power to choose though it has to reject ; it is therefore no objection to the Dionœa having digestive organs, that it has no power to choose its food, sensitive alike to all. On the contrary it exactly resembles the digestive organs of animals in this, that after closing over indigestible food, it can reject. After performing the same function over beef, it derives a benefit ; but after *eating* cheese, it suffers from the effects of the *bad food it has digested.*

That the *Dionœa* often seems to do as well when there are no insects about, would seem to be a good point. But if Mr. Canby can show that there *is* digestion and use of insects going on, the fact that plants live without them, will only show, what we already know, that nature does not always carry out her processes in one way. She makes a cat carnivorous ; but when meat fails her, she will take to vegetable food. We mean the Dionœa may have several ways of taking in its food.

The poetic fancy that the leaves are merely a form of the spirit of death, is a pretty one : and that insects are killed for mere pastime by the *Dionœa* is worthy of an Ovidian pen. But unfortunately science is a hard hearted matter-of-fact sort of an old fellow, and he insists that selfishness is at the bottom of every organic movement. Whatever is done by any plant or animal is in some way or another intended *for its own good.* There is no doubt of the truth of this. The actions of Dionœa, therefore, it is safe to assume at the outset, are not for the mere general purpose of keeping down insects which may injure other plants equally with itself, but for some special purpose which is to benefit the Dionœa race.

As Mr. Canby may not see " Old Castle's" notes for some time, we have mentioned these remarks of our own. In time he will no doubt speak for himself. He will, we are sure, thank " Old Castle" for his suggestions, and be glad to hear from others in the same way.—ED.]

THE APPLE ON THE PERSIMMON.

BY H. G. L., VOLUSIA, FLORIDA.

While living in the southern portion of the Peninsula of Florida, some eight years ago, I noticed that amongst the very many fruits in that favored country, the apple, the best of all fruits, was missing. Many of the planters in the vicinity where I lived had numbers of apple trees, but I was told that they never bore fruit. This seemed so strange to me, knowing that in the region of country called Middle Florida, but one hundred and fifty miles distant northward, the apple, or at least some varieties of the apple, grew and bore well, I instituted inquiries amongst the planters of my neighborhood, and elicited the following facts : That the apple tree never grew as large as it did farther northward ; it seldom or never completely shed its leaves in winter, but proved an evergreen in this mild climate, where frost is seldom met with ; that it blossomed at very uncertain periods, in fact in all the winter months ; that fruit very seldom set, or if it did set at all, fell off when of the size of a partridge egg. On ascertaining these facts, I formed a train of speculation as to whether some stock could not be found, upon which the apple would grow, and which would obviate these bad qualities of the pure apple stock. I was at one time led to believe that it was the difference in the soil, which had some material influence on it, but on comparing notes with others, I found that the apple in parts of Georgia and Middle Florida grew on similar soils. After thinking the matter over some time, I determined to graft the apple into the different native trees which possessed some relationship to it. I knew it had been tried into the haws, of which we have many varieties. At last I hit upon the Persimmon, or American Date Plum, Diospyros Virginiana, which in this state possesses the following characteristics : It grows to be quite a large tree, often a foot or fifteen inches in diameter ; it sheds its leaves amongst the earliest in the fall ; it ripens its wood, and

remains at rest all winter ; it is the latest tree to put forth leaves and blossoms in the spring ; it grows vigorously in our poorest soil.

With these facts before me, I communicated with a number of planters, who immediately grafted young Persimmon trees with apple shoots, grafted at or below the surface of the ground. The grafts invariably took well and grew vigorously. The war breaking out, I left that section of the State, and have not since gone back ; but I have good reason to believe that those trees bore fruit, although I have not seen them. This summer I communicated these facts to a friend residing close by me. He tried the experiment, and was very successful in having his grafts take and grow well.

With these facts presented, I ask that some enterprising nurseryman will try some experiments on this stock. Perhaps some good may arise from it, in giving us early or late apples at different seasons than they now appear on their own stocks. Should it prove a successful thing, we of the tropical regions of the United States may hope some day to have at our homes apples of our own raising as good as those we get from you.

[It is hard not to feel that our correspondent is not in some way mistaken. It has become a maxim in Horticultural Science that only related things will graft together.

There is no relationship known between the Apple and the Persimmon, and unless there is some hidden relationship not yet known to Botanical Science, it is hard to understand how they could unite.

On the other, we have often found " science" mistaken ; and we never feel sure that she "knows everything." And again our correspondent is an educated and intelligent gentleman, and not likely to be mistaken. Hence we are in a quandary. Possibly the apple scions grafted at or beneath the ground made roots for themselves.

It is well to remark that trees do not always prefer a close affinity with which to unite ; and sometimes they seem to be actuated by sheer obstinacy. The apple, for instance, is no nearer the Quince than the Pear ; yet the latter grows well on the Quince, and the former does not care much about it. And the Pear, it grows well on the Quince, but is indifferent to the Apple, which is nearer to it.

Supposing the union of the Apple with the Persimmon to be a fact accomplished, gardeners will be slow to understand how much of the influence our correspondent wishes the Persimmon will be able to gain over the apple. Yet this is rather new ground, and no one knows much about it. The tendency of modern thought is to believe there is really more influence communicated to the graft than the stock has hitherto had credit for. We saw recently a Bartlett Pear, which for twelve years had grown grafted on an apple tree. The fruit was smaller than usual, but most delicious ; but the branches grew in a most remarkable manner, having an upward spiral growth. Whether this is usual with this Pear so grafted we do not know.

We should be very much obliged to our correspondent if he will examine a grafted Persimmon himself, and see to a certainty whether a union took place, or whether the apple threw out roots of its own. That settled conclusively, it would open up some interesting matters.—ED.]

THE ADVANCING PROGRESS OF OUR HORTICULTURE.

BY WALTER ELDER, PHILADELPHIA.

If any man had openly predicted thirty years ago, that our horticulture would be so much revolutionized by improvements, by this time as it now is, he would have been considered a lunatic. Let us see what has produced the wonderful change.

See the numerous and rich discoveries of botanist, the many importations of valuable, curious and beautiful plants from far off lands, opened to us for commercial intercourse; the enterprizing industry of our seedsmen and nurserymen, their rapid and successful systems of artificial propagation, and their well adapted arrangements for the purposes ; the skillful care of amateurs and private gardeners in growing the plants to maturity, and improving many species by better culture ; the production by hybridization, of the almost innumerable varieties of superior excellence. See the wonderful variegations of blossom and foliage of a now numerous class of ornamental plants, the strange habits of Orchideæ etc., the increased sizes and wholesomeness of many culinary vegetables, the larger and more luscious fruits in greater abundance, and their more general use and the nicer modes of serving them at table and preserving them for long keeping ; the ready sale of all our horticultural productions ; an appreciative and generous public, with the means and liberality to encourage and support a branch of industry, that gives health to the people and adornment to the country, as well as wealth and honor to the nation.

The more general diffusion of useful knowledge and early intelligence of every thing better and new, by our well conducted periodicals, and the finely illustrated catalogues with glowing descriptions of rare and valuable plants, by the more intellectual portion of our seedsmen, nurserymen and florists, have awakened a more general love of horticultural productions and a desire to grow them, from which, highly embellished parks, richly adorned villas and suburban gardens are numerously annually, increased; and by which our land is made beautiful and our national character is exalted. The general use of pretty cut flowers for ornamentation at our various social entertainments, bespeak our love for refinement.

The ingenious modes our commercial gardeners have adopted for the transportation of seeds and small plants by mail, and their speedy and safe travel, greatly promote the early distribution of new introductions; the well compiled volumes upon the various branches of horticulture and other sciences, are very edifying, and enlighten the minds of cultivators. *Chemistry* teaches us the constituents of soils and requirements of plants, by which we learn how to crop different kinds of land, and how to improve them for the growth of other crops, for which they are naturally unsuited; the kinds of manures to apply to different soils, and where the beneficial effects of concentrated fertilizers will show most clearly.

Entomology teaches the habits of insects and how to destroy them.

Botany teaches the whole physiology of plants, how to cultivate them and how to make them productive and the cause of unproductiveness, their general uses and how and when they should be used.

Plumbing gives us a plentiful supply of water where it is naturally scarce; the lawn mower and improved hand implements with yearly additions, expedite and cheapen the labors. Labels and stakes of various sizes, suited for all our wants, are furnished us by machinery.—Very ornamental frames and lattice works are ingeniously wrought with galvanized wire, for both climbing vines and standing plants.

Horticultural exhibitions where choice new productions and the superior yields of the old are displayed, have stimulated a desire to compete and excel. The essays and discussions upon various topics are very instructive. Those of our modern fruit growers are too discordant for general edification—stiffness should yield to reason.

Our superior modes of glass structures and general knowledge of culture in them, have elevated us in forcing fruits and vegetables and in growing ornamental plants, and in keeping up a constant bloom of tender exotics all winter; the raising and nursing of tender plants in hot beds in spring, until the weather is warm enough to set them out; the saving of half hardy plants during winter in cold frames and pits all help.

Our horticulture has already attained a lofty standard. Our horticulturists are highly intelligent and persevering. We are steadily ascending the hill of perfection and fame; if tranquility reigns, we will, ere the present century is run out, be able to cope with the whole universe in the qualities and values of horticultural improvements and productions.

FOREIGN REMINISCENCES.

No. 6.

BY H. W. SARGENT, ESQ.

ENGLISH TREES.

All English trees are more or less finer than the same varieties in other countries. The foliage is usually larger and much deeper and darker in color. The whole effect of a park tree, if standing alone, is much denser and more umbrageous than our single trees, and the consequence is a much finer effect of light and shade.

There are also, certain trees which have a world-wide reputation, such as the Druid Oaks at Oakley Park, supposed to be over 3000 years old. The Burnham Beeches, near Windsor. some oaks at Welbeck Abbey, the Duke of Portland's, and in Sherwood Forest. Many of the Yews are most wonderful in their appearance of age and antiquity—knarled, mossy, twisted, grey—no living thing can look more venerable. There are Yews still flourishing in a green old age in England, which are supposed to be over 1000 years old.

In Hatfield Park, the Marquis of Salisbury's, I remember some very fine oaks; and in Windsor Great Park there yet remain many wonderful specimens. The King's Oak is said to have been a favorite of William the Conqueror. The interior will accommodate 20 to 30 persons, standing; and 10 can sit down to dinner. There is still some disput as to the celebrated Hernes Oak. By many it is supposed it was felled by command of George

III; but some of the oldest inhabitants of Windsor insist that it is still standing in the little Park.

Perhaps Sherwood Forest contains the finest oaks as to size and age in the world. Birkland and Bithage Forests together cover about 5miles of the grandest piece of sylvan scenery imaginable. Bithage is a complete forest of oaks, with the most impressive aspect of age to be seen in the kingdom. As Miss Howitt beautifully describes it: A thousand years, ten thousand tempests, lightenings, winds and wintry violence have flung their utmost force on these trees; and there they stand, trunk after trunk, scathed, hollow, gnarled, stretching out their bare sturdy arms on their mingled foliage and ruin--a life in death. All is grey and old—the ground is grey—beneath, the trees are grey with clinging lichens—the very heather and fern that spring below have a character of the past.

On all sides you see standing in their solemn steadfastness, huge, wierd, and mossy Oaks–some riven and laid bare from summit to root by the thunderbolts of past tempests.

An immense tree called the "Shamble Oak," is so called as the place where Robin Hood hung his slaughtered deer; and to this day there still remains the hooks in its vast hollow. At Welbeck (the Duke of Portland's) near Sherwood, in fact a part of the forest, are several wonderful Oaks, the Porter Oaks,–one being 100 feet high, by 40 feet in circumference—the other 90 by 36. The Seven Sisters 88 feet high by 80 in circumference. The Greendale Oak, in 1724 had an opening sufficiently large to drive a carriage and four through. The circumference above the arch is 35 feet 3 inches, and the height of the arch 10 feet. This tree is supposed to be 800 to 1000 years old.

[THE BURNHAM BEECHES.]

Next to the Oak, the Beech is in England the most impressive of trees, if we except a few of the grand old Cedars of Lebanon. Among the celebrated Beeches are the Burnham Beeches which Gray, anthor of the beautiful elegy in a country churchyard mentions as, "The nodding Beech that wreathes its old fantastic roots so high," near Windsor, of which a sketch is annexed, quite as wonderful in their way as the Oaks in Sherwood Forest. The great Beech in Windsor Forest is supposed to have existed before the conquest. The trunk at 6 feet from the ground measures 36 feet in circumference. The Knole Beech is 88 feet high, diameter of the trunk 8 feet 4 inches, and of the head 352 feet. At Knole too there is a magnificent avenue of Beeches, called the Duchess walk. At Taymouth Castle, the Marquis of Bredalbane's, I measured last year a Beech 43 feet in circumference (the stem) 4 feet from ground; and a Larch at Blair Athol, one hundred years old—the first Larch planted in Scotland, 16½ feet in circumference 6 feet from the ground, having a tall columnar stem, nearly 120 feet, and a head like an Oak or Cedar of Lebanon. The Larch plantations at Blair Athol, cover 11,000 acres, and 27,000,000 of trees have been set out.

IRREGULAR PAGINATION

PURSH'S JOURNAL.

(*Continued.*)

Jun. 9. After breakfast I took to the road on my return to the water gap; going the same route as I had come up the River, the day exceeding warm & the fatigues of yesterday made me feel it so much more. I took my course several times up the water courses to the mountains, but observed nothing interesting; I arrived in the afternoon at Hellers on the Bushkill; here I stood over night, from this place I would have to turn off to the beach woods, so I inquired for the route, but could not get any satisfactory information; I had to return to Howsers on the Water gap to sent off my trunks from there, so I expected to find information by some body there. All the country about here is nothing but heaps of mountains interspersed by small streams of water, some of them so wild that there is no access to them the vegetation generally the same as near Philadelphia.

Jun. 10. About noon I arrived back at Howsers. Rested myself for the rest of the day, to make myself ready to set out for the beach woods to morrow. Packed up my trunk & made up my wallet to be ready to be absent from my trunk for some time, at least untill arrived at Tyoga.

Jun. 11. I had to wait for an opportunity to put my trunk back to Easton having no chance of sending it from this place to Tyoga; about noon a wagon arrived to go to Easton, with which I sent it oft; & immediately after,set out for my journey. After ripe consideration & being not able to get any good information about the route through the beach woods from above the river I concludet to take the route to Wilkesbarre; being besides informed to meet with a great part of the route that way, similar to the beach woods and to have to pass the very high mountain Pokono, which abounds in large swamps, I thought it best to take that route. I travelled along side a ridge of hills & mountains having a pleasant cultivated valley, bordered by the blue ridge to my left hand; I only travelled about 12 m.to Shafer's tavern, where the road from Easton comes in.

The valley along the ridge, though only watered by little springs now, seems to have been a bed of a very fine large river, which probably emtied itself through the wind gap; all the stone found about here are roundet off, by the rolling in the old bed of this large river; & even large rocks of several yards diameter have the mark of having been worked upon by the water.

12. I left Shafers early in the morning though it being very cloudy, I expected it might clear off; but having gone a little ways it began to rain & I was obliged to take shelter at another public house only 3 m. distance, call'd Huths, It formed itself into a rainy day alltogether, & having procured an old toren map of the tract of my journey at Minisink which I found would all fall to pieces immediately, I betuck myself to making a copy of it which occupied me nearly all day.*

13. Still rainy; but after breakfast it beginning to look likely for clearing oft; I went on toward Pokono mountain, only 6 m. distance. Frequent showers interrupted me all the way; When I came to the foot of the mountain I observed the Kalmia latifolia beginning to flower, In a wet meadow Senecio aureus, Stellaria graminea (?) decandria 3 gynia petalis bifidis—Remains of Trillium erythrocarpum, Diervilla, — leafs of Dracœna borealis, Pyrola rotundifolia—without flowers —Anemone nemorosa, Orchis bifolia(?) I only found one specimen, though I searched for more, of this singular species of this tribe, but I expect to find a chance for more further on. The ascend of the Pokono lately has been turnpiked to the top, where they are still going on to meet the turnpike through the great swamp. I observed nothing particular, but coming to the barrens in the top, I soon found Cornus canadensis fl—Rhodora canadensis grows here in great plenty & might easely been taken for Azalea when out of flower, it nearly is done now flowering: Trientalis sp. I begin to doubt of its being the same as the European. This country being so high a spot, I thought it worthy of making some stay here, to have a full examination of it; accordingly I took lodging at a small hut, newly erected there for the accommodation of travellers. After taking some refreshment I took a walk towards the pine swamp.

Those swamps as far as they are accessible are full of wet holes filld with Spagnum & other mosses, between which the Cornus, on high hillocks shows its beautifull white flower: Trientalis in great plenty—here and there a plant of Polygala grandiflora Walt. fl—Panax 3-foliata fl. Rubus Dalibarda, R. saxatilis ?—fl. the Helonias erythrosperma Mx. very frequent in more dry situations—just now drowing up its flowers,—they call it here Unicorn & say it poisons cows & other cattel. A species of Trillium, which I think has not been taken notice of by Michaux, & which I call T. pictum, on account of the beautifull red stripes which the petals are marked with on their base, grows all over these swamps. Kalmia angustifolia is natural to these grounds, either wed or dry. It is just beginning to flower- A species of Viburnum. In a small run Chrysosplenium oppositifolium. — Thesium corymbulosum fl. Vaccinium disomorphum, resinosum, stamineum, pennsylvanicum in full flower. I observed a species of umbelliferous plant very common here, which seemed new to me. Leaves of Epilobium augustifolium as I supposed.—Before evening I found in a very bogy wet piece among the shade of bushes a species of Convallaria entirely new to me: It has a a raceme of sparsed white flowers, & from 1 to 3 leaves on the stem, its roots go through the spagnum & mud to such a depth, that with all my endeavors I could not get one wholly out o the ground.

Jun. 14. In sight of this house there appeared a high mountain or knob, called Bimble hill, which I was anxious to ascend, it being only at a small distance from the place I stood at; the landlord & another man made up parthie with me with their rifles, to go up to it & from it to the ponds, which are at a small distance from here; in ascending the mountain I observed nothing new, the sides & top are composed of a thin soil over loose stones & rocks; I found on moist places the Cornus canadensis up to the very top. Diervilla & the common mountain Gooseberry grow among the top rocks though the country being so very high I dit not observe the Sorbus or Sambucus pubens common to such places. On the N. W. side of this mountain several deep holes, like wells,some of them above 0 ft. deep,have been observed by the hunters, we were in persuit of them, but could not find them, none of the company ever had been upon this mountain. The vaccinium stamineum was here in full flower in great abundance.

After having spent sometime in examination of the top. we descended on the E. side to get to the ponds & Cranberry mashes; In coming near to the foot of the hill I observed strong plants of the umbelliferous kind above mentioned which soon persuaded me to be nothing else, but the Aralia hispida, though I dont know this plant, having never seen it, but the habit, shows this to be a species of Aralia, the people call it here Swamp Elder.—Coming down near the ponds I observed several of the former mentioned plants, & for the first time in this nighborhood the Epigæa repens. In crossing the main road I observed among the washed stones a kind of black lead ore, very heavy & but little apt to blacken the things, rubbed with it, probably lead may be found in this part, if searched for diligently.—Dalibarda fragaroides out of flower grows very frequently on mossy hillocks in company of Mitchella repens —& very often Helleborus trifolius when we came to the ponds & cranberry marshes all my attention was paid to the plants of the spagnous places. These marshes are covered with a thick coat spagnum, floating in a manner on a more or less watery mud, which easely gives away & let you sink through one to four feet deep; below this a hard and sound bottom is found, which makes those places somewhat different from those, of a similar description, I have been used to see; At first I was somewhat timid, to go through, for fear of sinking deeper in, than I would be able to get out again, but finding so solid a base we went on from one side to the other without danger: the Cranberrys of last year's growth, were now in such a condition to make a very agreeable & pleasant repast: I never thought to eat so much of this fruit raw, as I dit this day.

On the edges towards the water, the Orontium aquaticum was in full bloom, which I suppose has been done flowering long ago in the nighborhood of Philada., amongst the Cranberry patches the Sarracenia purpurea, was begining to flower—further oft, & more near to the dry ground the Andromeda pulverulenta, & still more farther back from it the Kalmia angustifolia made very thick & low covers of the ground:—Here & there I observed some of the Larix americana calld here Tamarack tree—& a great deal of that kind of Pines calld here double spruce; for want of descriptions I can not recollect which it is.—Several species of Carices grew among the moss—& in the ponds itself the Nymphea lutea began to show its flowers.—Those ponds unite their water & fall down Pokona to furnish one of the branches of Lehigh river. This mountain seems to be a good deal higher than the blue ridge & its vegetable productions show the relation of its climate, with that of Canada, I dont know whether Rhodora canadensis has been found nearer to Philada. than this place but I almost doubt it has.

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* This veritable copy of the map, with the route traced upon it by Mr. Pursh, has been presented to the American Philosophical Society, by Prof. A. Gray, to whom it was given by Prof. Tuckerman, of Amherst College. This gentleman, attending the sale of the Botanical Museum of the late Mr. Lambert, purchased two collections of American plants:—one of which contained Pursh's duplicate specimens; and among them, this map was found. A singular incident where things are brought together after a long period of separation: in this case, a term of 60 years has elapsed.

15. I intended to leave this, this morning, but it set in for rain, which made me give up the Idea of leaving it this day : I wrote on the letter for Dr. Barton & finished it so as to have it ready, if any oportunity of sending it on, should offer.—About noon it looked for clearing off; I took the road, but was soon overtaken by heavy showers which obliged me take up lodging near Toby hannah creek—Before I arrived there I fell in company of a gentleman on horseback going to Easton to whose care I intrusted the letter, finished this morning, desiring him to be so kind as to but it in the post office there.—Nothing remarkable seen all this day ;as I descended down Pokono, gradually the plants, so interesting to me there left me, one after the other, & only more common Pennsylvania plants made the cover of the ground.

16h. The morning promising a fair day, I was anxious of seeing the great Wilkesbarre swamps, after entering it, I soon found, that I would have no more chance than just to walk the main road, which is generally made artificially with logs & ground on it; the Tiarella cordifolia grows here in great plenty; now in full bloom. I observed a white violet, similar to the one seen in the Water gap, but near to it & seemingly connected with the stolones of this, I observed leafs & roots of an other species with very large & thick leaves, quit different from the one mentioned. Here for the first time I seen the Oxalis acetosella, as I supposed Michaux calls it, this very handsome flowering species seems, to the best of my recollection of the same plant in Europe, to be quite another thing, the flowers of this species are fare larger inside white, outside purplish, sometimes quite purple both with dark purple stripes, which terminate near the base of the Lamina in a yellow eye ; The flowers of the O. acetosella of Europe are clear white without the stripes or the yellow eye, & far smaler as far as I recollect the leaves may be the same shape, but as I suppose the specimens of Michaux were compared in a dryed state & likely bad ones, with the European sort, made the error.—Tamarix glauca and sempervirens in full flower :—The ground in any open place is covered with different species of Fern, Osmundas & Nephrodiums of the more common kind.—I dit not observe any of the Cornus canadensis here, untill I had crossed the Lehigh, when I med with a few plants of it, & the Convallaria bifolia in full bloom. Here I likewise observed the Azalea nudiflora yet in full flower, which is done, almost everywhere else. The Trientalis is here in a larger & more european like shape, than I seen it at Pokono.—The chief timber of this swamp is as far as I could see it—Hemlock mixed with Water beach (Carpinus) Aspen &c. I think even if would have taken the trouble to penetrate for some distance into it I would not have found any thing more interesting, as I seen along the main road, with but very little deviation from it, now and then, when chance & oportunity required or allowed it. Late in the evening, after crossing several very high ridges, I arrived at Wilkesbarre, & took up my quarters at Mr. Fells.

Jun. 17h. Wilkesbarre lays in a most charming situation, the rich and spacious bottom, which the mountains from here, on the Susquehannah is indeed picturesque—I have not seen a town in Pensylvania so pleasantly situated, as this. Harrisburg on the Susquehannah is the nearest to it ; but by no means equal in every respect ;the newly opened turnpike to Easton, will bring the trade of the upper part of this river into the Delaware, as the land carriage of all kind of produce will be easier, than the very difficult water carriage down the River.

DRYING PEARS.

BY MR. THOS. L. SHEILDS, SEWICKLY, ALLEGHENY CO., PENNA.

In the August No. of the *Monthly*, in an article on "Drying Pears," your readers are invited to communicate anything they may know of the process. How the pears referred to were dried I do not know. But in answer to your enquiry, I send you by Express to Germantown to day two specimen boxes of pears, dried here after the mode practised in our family for many years. They are Seckel pears,prepared last year. Those in box marked No. 1 were dried whole, and in halves unpared. Those in box No. 2 were first pared and halved or quartered. The process is quite simple. They are taken when quite ripe and placed in the oven after the bread, for the baking of which the oven was heated, is removed. Here they remain until the oven becomes cold, when they are taken out and laid away in a dry place until next baking day—an interval of four or five days—when the same process is repeated.

When the pears are large,or are to be dried whole, a third insertion in the oven is necessary. They will keep an indefinite time. We have kept them—I hardly dare say how many years—certainly four or five. If I am not mistaken my neighbors, the Economites, have kept them eight or ten years. I think you will like them and agree with me that those dried whole are the best.

If you wish any further information upon the subject that I can supply, I would be pleased to do so. You say your German pears were "not so sweet as figs, of course." You will find these sweeter and better than figs, if my taste is reliable.

[We are very much obliged to Mr. Shields for this communication. The Pears sent were much superior in quality to the German pears referred to. They were certainly better than the best figs, and if they could be brought regularly into market at a cheap rate, the trade in these dried pears would be almost unlimited. "Dried pears," as usually sold, are dry, woody—indeed wooden things,—and unpopular. These are as juicy as if just gathered from the tree. Those with skins on are not handsome; but this, not an object with those who would dry for their own use, could be easily remedied by those who preferred them,especially for market. Paring would make them high priced. Possibly they might be skinned as peaches are by some lye preparation. At any rate there is enough in these excellent samples to show that the Pear grower need not force his crop on a falling market, or wonder what to do with his surplus pears.—Ed.]

REPORT OF VISIT TO THE VINEYARDS OF MISSOURI.

BY B. L. KINGSBURY.

Read before the Alton Hort. Society Aug. 8th.

Mr. President :—By invitation of Dr. Hull, and in company with some of the prominent grape growers of Missouri, I have had the pleasure of visiting some of the most extensive vineyards of Missouri, between St. Louis and Pilot Knob. Upon Dr. Hull, as one of the State *Ad Interim* committee, will devolve the duty of making an elaborate report of our visit for the State Horticultural Society.

In the mean time a synopsis of our visit may not be without interest to the members of this Society. Taking the cars at St. Louis at 8 o'clock A. M., we went directly to Pilot Knob. About fifty miles from St. Louis, the iron region begins. From there to the knob (about 40 miles) the country is rough, and very uninviting to either agriculturists or horticulturists. Corn crops poor on the whole route, and the appearance of the fields indicates poor crops of grain. Apples remarkably fair and large crops. We passed but few orchards of large size after striking the iron district.

After spending a short time at the Knob, we took the return train for Vineland, where the investigations were to commence. Vineland is about fifty miles from St. Louis, at the commencement of the iron district. At this point we visited the vineyards of Dr. Dyer, Judge Newcomb and Mr. Marsh, staying over night with Dr. Dyer. They all have extensive vineyards, in which we found the grapes rotting badly, particularly Concord. In the vineyard of Dr. Dyer we estimated the loss by rot to be 50 per cent. at least. In the other vineyards, less. Taking the cars in the morning, we came on to De Soto, and visited the extensive vineyards and orchards of Col. Bainbridge, who has one of the finest fruit farms in the West. Found considerable rot in the Concord, probably 10 per cent.

The few Catawbas we saw were badly affected with mildew and sun scald. At this point Dr. Hull, (who can scent *fungi* forty rods, and whose nasal organ was spoiling for want of exercise) was seen to start on a 2.40 gait for the extensive peach and apple orchard of Col. Bainbridge, and the cry for a spade gave notice to the rest of the party that he had treed some *fungus*. Several trees were soon uprooted and found to have been killed by a fungus which attacks the roots. It is a new disease, and was first discovered by him this season in Southern Illinois, in the extensive pear orchard of Parker Earle. In the orchard of Col. Bainbridge it had attacked the pear and apple, and was supposed to have been the death of several cherry trees. The Doctor having had a hearty meal of fungi retired in good order, and was soon seen bearing a full grown peach tree on his shoulders, which he convinced us was dying with the yellows, a disease said to be contagious. It already had a strong foothold in the orchard of Col. Bainbridge, and unless it can be checked will soon destroy his whole orchard.

Mr. Thomas, who is good authority, says an instance is not known of a tree being saved that was badly infected. They should be burned root and branch, and no peach tree put in the same place, as the smallest piece of root left in the ground is sufficient to give the disease. Col. Bainbridge has 4.000 trees just coming into bearing, and it is a very serious matter to contemplate the loss of so fine an orchard. Leaving De Soto we came on to Bushburgh, the residence of Isadore Bush and Son, twenty-five miles from St. Louis. He has extensive propagating houses, as well as vineyards. Here we find very little rot. Concord and Rogers' No. 1, the most, but neither of them to much extent. He has a large number of varieties, all looking well in fruit and foliage, and showed systematic and intelligent pruning and training.

Major E. S. Foster has a vineyard near by, of nine acres of Concord of two years' growth, which shows the most uniform look ever witnessed: not a vine missing, all grown with equal vigor; leaves bright, healthy, and free from disease of insects—worth a journey of several miles to see.

One mile farther on brings us to the residence of Rev. Chas. Peabody, President of the Missouri State Horticultural Society. Mr. Peabody has been one of our party during our investigations, and gives us a cordial welcome to "Glenwood," where we pass the night. His place lies on the river, twenty-four miles from St. Louis; the place is new, but will, in time, be one of the handsomest country seats near St. Louis. It has all those natural advantages of scenery for which the Mississippi bluffs excel. He has a small vineyard in its first bearing year; fruit and vines showing exemption from disease and insects. He trains on trellis to perpendicular wires; uses no twine, but fastens altogether with tendrils—and the method is certainly a success with him.

Leaving Glenwood, our next and last visit is to "Cliff Cave," fifteen miles from St. Louis. This property consists of between two and three acres, situated on the river, and about two hundred feet above it. It is owned by a stock company, of which Dr. Spaulding is the much largest share-holder, and has general charge of all the operations connected with it. There are twenty-one acres in grapes of different varieties, principally Concord, Norton's Virginia, and Ives. Fruit and vines are looking finely; an occasional rotten berry—but no more than we all find each year. Rogers' No. 1 is worst of all.

The bearing vines are trained on the horizontal arm system, and closely pinched in. In passing through a two-year old vineyard of Norton's Virginia, Dr. Hull saw a dead vine, and there was an immediate cry for a spade. He wished to get at the *root* of the matter, and show us that he smelled something worse than fungus this time. On digging down about eight or ten inches we found the vine completely eaten off by a borer, and farther search unearthed a borer two inches in length, half an inch in diameter at the head, and tapering. On farther search we found several vines dead, five of which we dug up and found a borer at each one. It is something new, and undescribed; and the fact that such a borer is at work should be immediately known throughout this State, and Missouri. Dr. Hull found the same one in Southern Illinois this season, which I believe is the first time he was discovered and made known.

Every one having a vineyard should dig up every vine they find dead, and if cut off by a borer, hunt him out and destroy him; he will be found within a few inches of where the vine is cut off. Each one if left may be the parent of innumerable others, and if they once become general, farewell to the vineyard in which they find lodgment. There were probably twenty vines in this vineyard destroyed by borer, enough if left to themselves to have destroyed every vine in the vineyard of twenty-one acres in two or three years.

Dr. Spaulding immediately set men to work digging them out with orders to find every borer if it took all summer. We gave Mr. Riley three fine specimens, who will breed them, and describe them in the "American Entomologist."

The result of our investigation may be epitomized thus: that the iron district is not suited to the grape. The farther we came from it approaching St. Louis, the better the grape in fruit and foliage.

The Concord this year is not so healthy as Catawba; I think the same fact will hold in this region.

Rogers No. 1 are rotting badly in nearly every vineyard. Delaware, Norton's Virginia and the Ives are doing finely both in fruit and foliage.

That as an example of clean culture systematic and intelligent pruning, the vineyards we visited can challenge the West.

That the grape is threatened with a borer worse in its effect than mildew, rot, and leaf hopper combined.

That the yellows in the peach has got a strong foothold in the region we visited. That a new disease of fungoid character threatens our fruit trees. And finally that for generous hospitality the grape growers of Missouri cannot be excelled.

SAND AND WATER FOR CUTTINGS.

BY J. M.

The plan of striking cuttings in sand and water, is one which I think might be more profitably followed than is supposed.

This is no new plan, having been known to our fathers years ago, but it is oftentimes not thought of, when we are wishing we knew some way of rooting some difficult case in hand. In the heat of summer, when this system of rooting should be practised, we are usually busied with other work than propagating, simply from our not having given it a thought, and never having seen it much practised. I have experimented somewhat largely with both hardy and tender plants and shrubs, and have had fair success, though being quite beaten with some obstinate cases. I place my pots or pans of cuttings in the full sun in a greenhouse, and water sufficiently to keep from flagging. I have found that too much water is as bad as too little, the rule seems to be to give enough to keep them fresh and no more.

I have rooted, Rondoletia speciosa major, Petrœa volubilis, Aloysia, and others that are somewhat difficult of rooting, with ease, by this plan; my Gardenias, Camellias, and the hardy Magnolias are easily rooted in the same way. Sometimes the hard wooded cuttings will not root at once, but if retained in the pans until the bottom heat is put on in the propagating pits in the fall, and placed therein, they push out roots immediately. I have rooted Magnolia glauca, in that way very successfully. I am this year trying Roses, with every appearance of success,—these latter are, however, out of doors, plunged in a half shady place, kept continually wet, by watering morn, and eve. One advantage I find in this method, irrespective of its success, is the small amount of care required. In the morning they are watered, together with other plants, and requiring no other care until night, enabling one to attend to other business, thus dispensing with the watchful care that most other systems require. There are very many choice plants one may have, that has baffled all attempts at propagating, which will be found to succumb to the simple process of sand and water.

EDITORIAL.

THE ENGLISH AND AMERICAN ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE.

The American Association for the advancement of Science held its annual session this year at Chicago; and during the same time the British Association was holding theirs in England. The *Gardener's Chronicle* congratulates its readers that Botany is receiving more honor than it has had. Dr. Hooker has been chosen President of the Association for the forthcoming year. In our own association Botany did not receive much attention; Geology had more enthusiastic votaries. The only botanical papers read were by Thomas Meehan on *The Laws of Adnation in the Leaves of Coniferæ;* on the *Botany of Mount Mansfield, Vermont*, by James Hyatt; *Habits and Peculiarities of Plants in South Eastern New York*, by the same author; *The Paludal Endogens, a class intermediate between Endogens and Exogens*, by T. C. Hilgard, comprise the whole list out of some one hundred offered on various branches of science. A paper offered on the Darwinian theory of development was not read, its author not appearing when his name was called.

In England Dr. Hooker's address devoted much time to this matter. He remarked that since the origin of species was published, ten years ago, it has passed through four English editions, two American, two German, two French, several Russian, a Dutch, and an Italian, whilst of the work on variation, which first left the publisher's house not seven months ago, two English, a German, Russian, American and Italian edition are already in circulation; that so far from natural selection being a thing of the past, it is an accepted doctrine with every philosophical naturalist, including a considerable proportion who are not prepared to admit that it accounts for all Mr. Darwin assigns to it. Reviews on the "Origin of Species" are continually appearing on the Continent of Europe, and Agassiz, in one of the addresses which he issued to his collaborateurs on their late voyage to the Amazon, directs their attention to this theory as a primary object of the expedition they were then undertaking. He further asserted, that of the many eminent naturalists who have accepted it, not one has been known to abandon it; that it gains adherents steadily; and that it is *par excellence* an avowed favorite with the rising schools of naturalists.

It was much regretted by many that Mr. Moran's paper did not come up at Chicago. It would have been an excellent opportunity to know exactly how this interesting matter stood there at the present time. We have been urged to give Mr. Meehan's paper in our columns, but we do not like to anticipate the regular published proceedings of the society.

WHERE IS THE WEST?

Our readers need not be told how trifling errors very often lead to very great mischief. It is this knowledge which makes us particular in even small facts. Were it otherwise we should feel open to a charge of "wanting to be smart," in noting the little mistakes of some of our contemporaries.

How a little error grows, is shown in the case of the *Canada Thistle*. Last fall a friend wrote in another journal, that he had seen this terrible thing "all along the lines of railroad everywhere West." This has been copied into all the "secular papers." The most ingenious theories have been elaborated to account for the fact, and the time of grave legislators has been occupied in devising pains and penalties on all who lend a careless hand in this wonderful scatterment. One theory to account for their being "everywhere West" amused us. "Behind each car was a vacuum, and into this vortex the rushing air followed, drawing the thistle seed, suspended by its down, with it. As soon as the car stopped the seeds sank down, and there a nest of seedlings formed."

How very pretty it sounds! But all who have looked to their own senses for their facts, know that the down of thistle, or any similar plant, does not keep the seed to fly far from home. The down which we see flying about has long since left its seed behind. It is but a balloon with its car detached. We have *never* yet caught a *lightly floating* thistle down that had a perfect seed attached to it. But, beyond all this, we cannot find this thistle "along the lines of railroad everywhere West." We were reminded last year, after going over twenty-five hundred miles of railroad, and not seeing any, that the "West was a great place," and "we had not been everywhere West." We have since been in another totally different direction, three thousand miles "along the railroads," without seeing a stalk. There are a few on the waste ground around some of the older towns, like Toledo and Cleveland; but this has nothing to do with the "railroad lines." It is plain we have not yet been "everywhere west."

Another and more important thing satisfies us we have not yet found "the West." We have fought against the barbaric practice of cutting away the surface roots of fruit trees, under pretence of "good cultivation." For a long time we fought alone. But it came to be a recognized fact, that just at the surface was just where the feeding roots of a tree were most wanted. Now there are but few observing men who do not thank the *Gardener's Monthly* for its course on this question. But some of the western writers discovered a new and remarkable physiological fact, and it was duly recorded in the *Journal of Horticulture*. Caring for surface roots might do in the east, where the roots, they at length admitted, did run near the surface; but western roots *ran down*, and a different practice should prevail there. We have examined this matter in Ohio, Indiana, Illinois, Missouri, Kentucky, Wisconsin, Michigan, Minnesota and elsewhere; and as we find the trees there run *shallower if anything*, than in Pennsylvania, we are again constrained to ask, "where is the West?

We would urge on our friends who write for our horticultural journals to be very *careful about their facts*. These two little matters which we have taken as illustrations, trifling as they may seem to be, will be the cause of incalculable injury—the deep rooting theory especially, as obstinate old errors, which annually destroy thousands of trees, and make fruit growing in the United States unpopular, will find a strong defence for many years by it, copied so widely and extensively as the supposed discovery has been.

RIPENING OF PERSIMMONS.

At a recent meeting of the New York Farmer's Club, Mr. D. H. Jaques of Boston, was introduced, who read a paper on the Persimmon. After the paper was read a brief discussion ensued. A. S. Fuller stated that it has been said that the persimmon is not eatable until after there has been a frost. But this is not so, as the persimmon grows in localities where there never is any frost, and the fruit is edible. He thought the attention of fruit culturists should be turned to the improvement of this fruit.

It is a remarkable fact that so very few persons know why a fruit is eatable when "ripe," more than when green. But the fact is, a fruit is *ripe* long before it is eatable. In an apple, for instance, the fruit is ripe as soon as the seeds are black. So far as the tree is concerned the process is finished. Vitality goes no further. Decay at once commences, and it is only after this has progressed some length, that the fruit is "ripe" in an edible sense. A ripe fruit is there fore a partially rotted fruit—nothing more. The French seem to understand this better. While the English say of a medlar, "it is not good to eat till it is rotten," the French use the word *blette* to signify merely a stage of decay. A bletted medlar means therefore a medlar partially decayed.

Now frost has no more to do with a persimmon than to hasten its decay. Time would do this as well as frost, and thus we find some persimmons good to eat before frost, because they ripen early, and decay naturally without the aid of frost.

It seems like blaspheming one's idol to say of a delicious fruit, that it is good only because it is rotting—but so it is.

THE LESSONS OF THE YEAR.

We promised in our last number to return to the subject to which we incidently referred, in our first paper under the above heading, namely, the reason why plants die under a low temperature; our point being that the cause was not the expansion of the moisture, thereby causing cell rupture; but rather cell shrinkage, or the loss of moisture by excessive evaporation.

We have now three criticisms before us,—one by Mr. Sargent, one by Mr. Hovey, and one by Mr. A. Featherman in *Southern Planter*. It would be a pleasure to give their remarks in full, had we the space. We shall try, however, to do their arguments no injustice.

Mr. Sargent gives his experience of the past winter in evergreens, and finds "contrary to Mr. Meehan's theory about the necessity of shelter," that "that those things protected or sheltered the most, have suffered most." Had Mr. Sargent stopped here, it would have been puzzling; but fortunately he explains what he means by "protection,—things "planted in a wood, and surrounded by the protection of Evergreens."

'Mr. S. has spent the last few years in Europe, and has not had the opportunity to read the *Gardener's Monthly* regularly; those of our friends who have followed our pages closely, are acquainted with the discoveries recorded during that time in our journal, that whenever a plant suffers in summer from a *want of light*, or from a *want of moisture*, its vitality is so much weakened that it readily parts with its hold on life, under a very moderate low temperature. Therefore, we naturally look for great mortality from plants under such circumstances, independently of any other cause. He says, "the west side of a wood was the next fatal place." Naturally so. The roots of the trees made the soil dryer, but the plants had a little more light, and hence a stronger vitality than those in the wood. "Those protected on the east side, and receiving the sudden rays of the mid-day sun, have either died, or suffered so much as to render them worthless." "Those on the east suffered very little." Will Mr. Sargent tell us, how the mid-day sun can injure a tree in such cases, *except on the basis of our explanation.* It will be seen that there is nothing in our friend's facts which opposes our view, or *which can be explained on any other theory than ours.* Mr. Sargent does not attempt it.

Mr. Hovey thinks "Mr. Sargent does not have much confidence in the evaporation theory, as he clearly proves that a location where the congealed sap vessels are thawed gradually, is the safest." When sap vessels "congeal" they burst. This is always the result of expanding moisture. In the cases before us they do not burst. They die from shrinkage. We are discussing why plants die when the vessels do not burst. If the sap in Mr. Hovey's plants *congeal*, he is discussing something which we are not, and so we may clearly pass his argument over.

Mr. Hovey, however, himself seems very doubtful about the value of his own argument, for he concludes by saying, "if by shelter we mean a plantation of trees at sufficient distance to break the force of the wind and yet allow abundance of air and sun, this may be of great service." Thank you friend Hovey. This is our argument, nearly. In our case the facts we gave showed shelter from winds *was* of service. Mr. Hovey has advanced so far only to a *may be*. He will rank with us after a while.

Mr. Featherman's paper is of a philosophical type. He seems to differ from us very much, and *in toto*; but we were surprised to find ourselves agreeing with him sentence by sentence, as we carefully went through with him. But when he wound up we saw it all. He says: "If the gentleman had only substituted *the going out of heat*, for the word *evaporation*, and made use of the word *heat* wherever the word *moisture* occurs, he would have hit the nail upon its head, and his article would have been a capital one, well deserving the attention of the farmer and the agri culturist."

Again he says: "The plant dies (under a low temperature) partly from want of nourishment, and partly by the abstraction of heat, which is increased by the dessicating action of wind."

It so happens that heat is of no use to a plant without moisture; only by moisture does heat circulate through a plant; and it is only by evaporation a circulation of heat is kept up; *with evaporation heat escapes.* Our facts and conclusions Mr. F. admits correct, if we substitute heat for moisture. Suppose we do so. The result is the same. He does not like our word *evaporation.* He prefers to call it a "dessicating process."

Varying Mr. Featherman's language, we understand him thus: The loss of heat in plants is increased by evaporation (dessication). This is exactly what we say, for of course we value moisture only as a medium for the circulation of heat. Mr. F. is "one of us."

We are glad of this discussion. Nothing can be more important to the fruit grower and arboriculturist. We have been too much under the sway of closet philosophers. The man who goes through the world with his eyes open, and with a full knowledge of what the learned in science has taught, sees but too sadly how little they know. What they teach is generally true as far as it goes, it is in the application in a general way that we see the deficiency. When Rumford taught that water was a non-conductor, because he succeeded in boiling water on ice, by having the water heated from the top instead of through the ice at the bottom, he thought he had made a wonderful discovery, and the world of physics rung with his praises. He did not see there were often counteracting forces. Yet people are found who will cast Rumford at you to this day, people who really know nothing of themselves, people who are merely closet philosophers.

In spite of "Locke," "Bacon," and other ponderous genuises whom our friends, once in a while throw at us, we beg to say that no writer, that we know of, knows anything about the death of plants by freezing; and before any of the readers of their works can understand it, they have to believe the following articles of faith:

1st. That plants *do not* lie dormant or hybernate in the winter.

2nd. That a plant must maintain heat to retain its vitality through winter.

3rd. That to circulate heat through its system in winter to prevent its parts from freezing it can only do so through the medium of moisture.

4th. That the dryer element invariably abstracts from the moisture. The atmosphere steals moisture from the plant in winter as well as in summer, in proportion to its dryness.

5th. The dryness of the atmosphere is usually in proportion to the lowness of the temperature.

6th. The more rapidly a dry surface is made to pass over a moister one the greater is the loss by the latter.

7th. There can be no vitality without a waste of heat.

8th. There can be no waste of heat in living things without a waste of moisture.

9th. To supply this waste, moisture must be drawn into the plants all through winter, even though the roots be encased in frost.

10th. When evaporation goes on faster than the capacity of the roots to supply it, death must ensue.

If any of our friends purpose to disagree with these propositions, we should like to know. If they do not, the deduction must be made *that plants can be killed by excessive loss of moisture in cold weather*, any philosophy to the contrary notwithstanding.

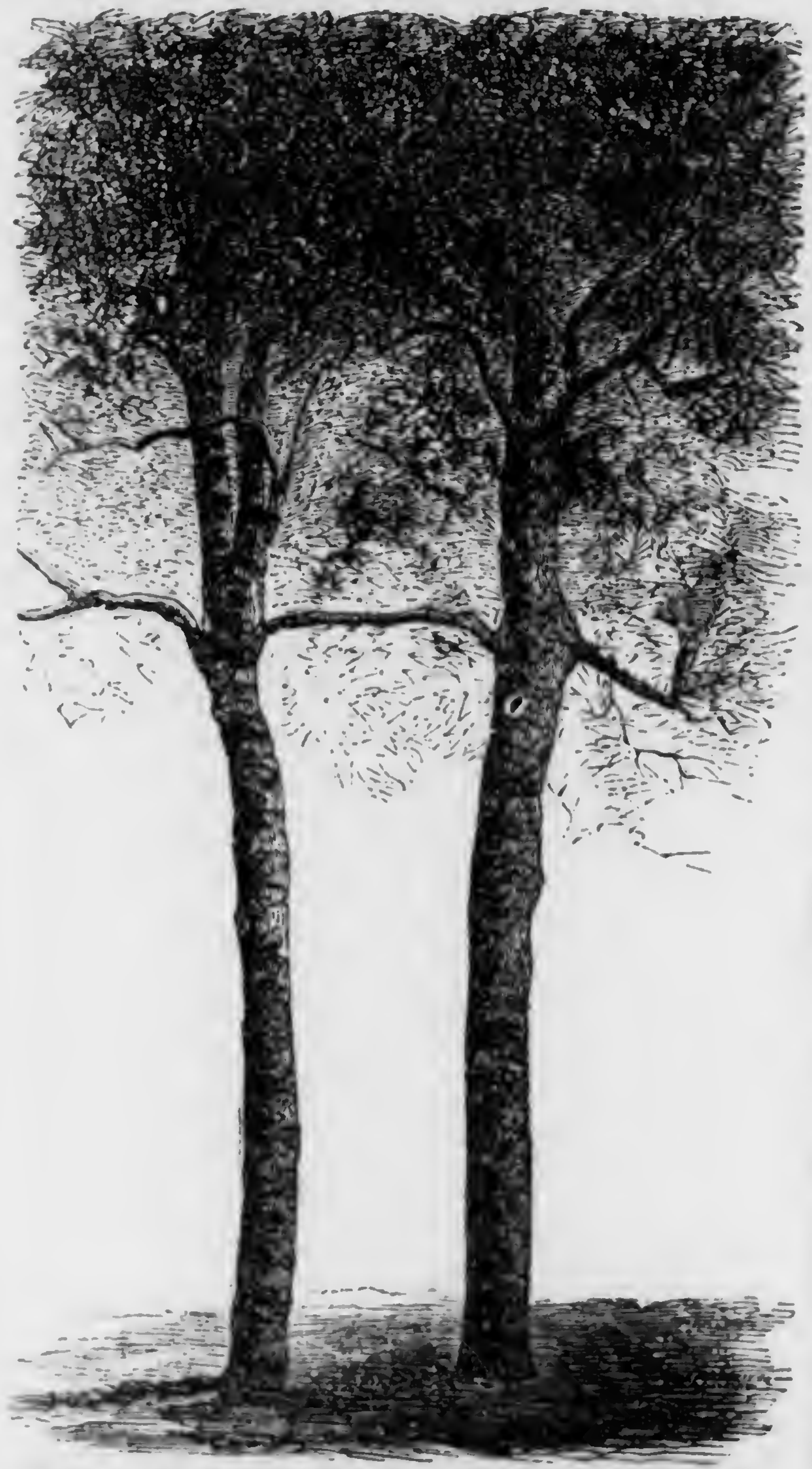
ALGÆ FROM A HOT SPRING.

At page 31 of Silliman's Journal of Arts and Sciences, present volume, is an article from the pen of Dr. H. C. Wood, of Philadelphia, on a water plant found growing in a hot spring at Benton, Owen's Valley, California! The water is often 160°, and it is interesting to know that any plant can live in such a temperature.

Dr. Wood finds it to be a plant hitherto undescribed and he names it *Nostoc caladarium.* This "plant" is apparently but a sort of gelatinous skin. On this membraneous matter another new plant was found, named by him *Chroococcus thermophilus.* This genus he says contains the very lowest known organisms—simple cells without nuclei, multiplying, so far as known, only by cell divisions.

THE TWIN HOLLIES OF ATLANTIC CITY, N. J.

From time to time, during the few past years, we have heard of these remarkable trees, and have listened to the most ingenious theories to account for their nature. Being in the vicinity this summer, we had the following cut made of this great curiosity.



These Hollies (*Ilex opaca*) are about thirty feet high, and the trunks about two and a half feet in circumference. They stand, we believe about six feet apart. The branch which unites them is perfectly horizontal, and to the casual observer, there is "neither beginning nor end" to the connecting branch,—nothing by which to show if it were a natural inarching case, from which tree the connecting branch proceeded.

One theory we heard some years ago to account for it was, that one of these trees originally grew on a sand mound, of which this spot is full—that the young tree sent out a six foot runner, and then rose perpendicularly to form a stem, at the same time sending down a perpendicular tap root. The main tree also sent down a perpendicular tap root. In time the sand hill became blown or washed away, and in the end the tap roots became the trunks of the two trees. Were it not that we have heard very intelligent men arguing this way, we should not think it worthy of note. If it is worthy of refutation, the fact that the connection is evidently fifty years younger than the trees connected, is enough.

Another theory is, the trunk of a tree will elongate after a branch is formed, carrying the branch upwards with it, and that instead of any washing away of a sand hill as in the other case, the connection formed originally on the same plan, was carried up. Lindley has argued the possibility of elongation in his *Theory of Horticulture*, and shows the evidence against it. We can prove his position *Corporeally* as well as he did physiologically, for when some twenty years ago, we used to visit a certain young lady, and at that particular time, with little care for botanical problems, we used occasionally to 'bump' our head against a projecting Buttonwood branch. We can now, if we want to, strike our head against the same branch still. There has been no elevation there. Independently of this, the comparative growth of the connection applies equally here as before.

However, by a personal examination, we can set the matter at rest. The branches of the Holly are exceedingly stiff. It is difficult to get it out of a set position. Many years ago a branch from the tree on the right struck against the tree on the left, and glanced or grew *upwards.*

In many other more flexible trees, it might have got away again; but the stiff nature of the Holly kept it there. In time the objecting tree grew with, and eventually surrounded the upright end of the intruding branch, until all external trace of the union became lost. About two feet above the point of union is a branch coming out of the left hand tree, where it comes out from the trunk is a slight *depression.* If it belonged properly to that tree there would be a *protuberance* instead. It is really the apex of the bent up branch from the right hand tree, and fully explains the mystery.

We have gone fully into this matter on account of the incidental lessons it involves; and, as hundreds go annually to see the trees, it may lay the seeds of valuable knowledge in vegetable physiology.

PINUS BANKSIANA AND PINUS RUBRA.

It is remarkable that two of our most beautiful native trees, the names of which head this article, should not be in cultivation. On referring to Botanical works, it is clear no one knows how beautiful they are. Of Pinus Banksiana, Dr. Gray says, "a low straggling bush or a small tree from two to twenty feet high." Michaux, Nuttall, Richardson, Loudon and others give about the same character of it. This is as much as may be said of it in the outskirts of its proper locality. Recently we had the opportunity of examining it through what we suppose the heart of its home. The woods between Lake Michigan and Lake Superior, are mostly composed of *Pinus Banksiana* and are generally from twenty to forty feet high—at Escanauba we handled one which was probably sixty feet high and four and a half to five feet in circumference,—little inferior in height to a very fine specimen of *Pinus rubra* alongside of it. Richardson says, towards the North pole the thickness of the trunk is out of usual proportion to the breadth of the branches. Not so here. The trunk had a very long tapering slender appearance as compared with the branches. Occasionally specimens would be seen standing by themselves; and nothing could be prettier than the slender, straight stems, clothed with its slender feathering. We have nothing from Europe or Asia that would make a more beautiful ornamental tree than the Gray or Banksiana Pine of this region.

The Red Pine is very much like the Austrian in appearance. Growing in thick woods, no one can appreciate their beauty; but occasional specimens, standing by themselves, showed that the Red Pine was by no means inferior, if not much prettier, than the Austrian. We hope to see them some day generally grown.

THE MAMMOTH TREE.

Dr. Hooker has recently written to Professor Brewer that the great tree has fruited in Kew, and is as "true a *Sequoia* as can be, and should have no other name;" and by common consent the English Botanists have dropped the name of "Wellingtonia." A lively discussion is now going on as to what its true scientific appellation shall be. Curious facts come to light. It is often called *Sequoia gigantea* of *Torrey;* but it appears Torrey has had nothing to do with its description. As our readers know, in botanical science the priority of right is with the first describer who points out the specific distinction from other plants. Accordingly dates have been hunted up, and it appears Endlicher named *Sequoia giganteum* in May 1847; Lindley, *Wellingtonia gigantea*, December 1853; Seeman, *Sequoia Wellingtonia*, January 15th, 1855; Kellogg and Behr, *Taxodium giganteum*, May 7, 1855.

Singularly enough, it has been shown by Hooker that Endlicher did not mean the tree in dispute by his name, but what is now known as *Abies bracteata;* so that name is out of the way. Kellogg failed to see that it was not a Taxodium, so that his name is also out of the pale of criticism; and therefore Seeman's name, according to a strict interpretation of Botanical rules, would seem to have abstract right in its favor—*Sequoia Wellingtonia*.

OBLIQUE LEAVES.

Every one knows that in Begonia and some other plants, the leaves are *oblique;* that is, the portion on one side of the mid-rib is more developed than on the other. Two of our native trees, the Elm and the Hop hornbeam, have these oblique leaves. In the volume of the Proceedings of the Boston Society of Natural History just published, Dr. Wilder shows that in the Elm the larger portion is in the upper or most elevated side—the leaves not lying with their edges horizontally,—in the hornbeam the outer or lower portion is the largest. De Candolle and Herbert Spencer have both tried to account for obliquity in leaves, but Dr. Wilder showed their reasoning insufficient. Dr. W. believed it to be caused by no external agency, but by an inherent constitutional force.

Professor Agassiz remarked that German Botanists, especially Schimper and Braun, had long since investigated the development of leaves in connection with the general subject of phyllotaxis. They had found that each leaf was primarily a swelling or wave of growth, freeing itself from the axis of the embryo; and that differences in size between the sides of a leaf were caused by the greater force of the wave in its upward or downward descent. Such peculiarities as have been pointed out between the leaves of the Elm and Hop hornbeam, existed therefore in the earliest formation of the leaf, while yet connected with the axis by a broad base, and before any construction for the petiole had taken place. Prof. Agassiz thought the word antistrophe better expressed the inverse relation of corresponding parts on the opposite sides of a line than symmetry. Dr. Wilder had shown that the corresponding leaves on each side of a shoot were symmetrical.

THE PINES OF CALIFORNIA.

At a recent meeting of the California Academy of Sciences, Dr. Bolander said there were but fifteen species indigenous to the State. Of Firs there were but four. He said Mr. Murray had a fifth, which he called *Picea magnifica*, which was but *P. amabilis*. He thought the European Botanists multiplied species in the interest of Seedsmen, as there was such a demand in Europe for seeds of *new* things.

SCRAPS AND QUERIES.

APPLES FROM MARYLAND.—*K. K.*, *Denton, Md.*, writes: "To day we Express to you specimens of two varieties of Apples, from the orchard of Mr. Thos. H. Kemp, Sr., Kent Island, Md., where for the last twenty-five years, they have been bearing regularly and abundantly. The trees are now failing, and the specimens we send are not even an average of what the fruit has heretofore been in size and appearance; but feeling anxious to bring them under your notice, and have your opinion concerning them, and the probability that the trees will never again produce fair apples, causes us to send you them. They are not now, nor have they been known to be, anywhere else in bearing. They are named here, Kemp's Favorite (which is the red and No. 1) and Kemp's Fall Excelsior (the striped No. 2). They most certainly are very superior apples for this climate. But the question or conclusion which we wish to arrive at, is whether you know them by any other names. We intend to cultivate them in our nursery, and though Mr. K., thinks the trees were not grafted, but were "suckers" taken from the roots of old natural trees, we still feel like submitting them to a thorough "fruit man" for inspection.

There is also another variety in the same orchard, which he calls Kent Island Pine; and while it is an excellent keeping apple, it is superior to either of the kinds we send in quality, but the trees are so far gone that specimens could not be obtained. From what we have seen and know of these three apples, we feel justified in saying that there are none others known here that are as deserving of favor, or as worthy of culture as they—and if they are not really natives of "Eastern Shore of Maryland," they are more easily acclimated than the other fine apples of the North and East."

[The *Favorite*, we believe to be the same as one known in New Jersey as *Bachelor's Blush*, of which Dr. Warder says, in his recent work on Pomology, is nothing but a "variety of Maiden's Blush." We hardly know what Dr. Warder means by a *variety* in this sense. Does he mean that two distinct varieties can come into existence otherwise than by seeds? Does he mean that it is *not* a *variety*, but the same thing modified by culture or climate, and which may revert to the original when circumstances change?

The "Excelsior" we cannot identify with any popular kinds with which we are acquainted. They are both evidently seedlings, originially from the same variety, having many points of resemblance to each other. The parent probably Maiden's Blush; which we believe to be a kind that, like Rambo and some others, has a power of nearly reproducing itself.]

THE FLORIDA LILY.—A plant which we had from New Orleans many years ago, and which we supposed to be naturalized there as *Lilium longifolium*, has taken it into its head to decide the question for us, and we have now seen it in flower for the first time in our lives. It proves to be really *Lilium longifolium.* Good luck has thrown the New Orleans friend in our way who gave us the seed many years ago, and we now learn it was not from a wild plant, but was *common in gardens.* Still further luck has flowered one of the Florida Lily for us, in our absence from home, but it was sent to Mr. Russel, who very kindly writes thus about it:

"It is *Crinum*—and I think with my present authorities, the native species *Americanum*. which, although the foreign works assign to South America, Dr. Chapman, in his Flora of the Southern United States, says, is found in the "river swamps cf Florida and Westward." Now for the other two of your Volusian correspondent, of which one, I think will prove *Pancratium*, and the other I cannot guess what."

New Strawberries,—*J. R., Milford, Del.*, writes:—"I am about to renew my strawberry beds. Have not done so for three years. Up to that time I had most of the popular kinds. Are there any new varieties since then that you can, of your own experience, recommend me to replace any of the old kinds?"

[This is a question we cannot answer. The strawberry is so local a fruit, that our "personal experience" should be in Milford to enable us to answer the question. We have not had this experience. With regard to the real merits of new strawberries, as impartial judges, we can only say that at pomological meetings half the people who try them say they are improvements, and half no better than others grown before. With people of the former class, the new varieties are decided improvements.]

Gardening for Ladies.—A *Rochester, N. Y.*, correspondent informs us that at that place a young Ladies' Seminary has arranged to have the elements of gardening taught as one of the branches of female education. We wish the establishment every success; and shall be glad to hear from time to time how the experiment progresses.

The Kent Strawberry.—A *Dover, Del.*, correspondent writes of sending some strawberry plants, but they never came to hand. He says of it: "The Kent is the largest berry I have yet seen, and of fine flavor. The Early Delaware is early, prolific, of good size and don't run down as small as some varieties. No. 4, large, handsome and prolific."

Potato sets without Eyes.—A correspondent says: "In planting the Rose potato this spring; some pieces were cut without an eye, some of these pieces are now up about four inches, while the others are dead ripe."

Seedling Grape.—A *Smyrna, Del.*, correspondent, sends us a bunch of grapes, with the following memorandum:

"This is an accidental seedling, 5 years old, first crop about 6th, and nearly as early as the Hartford. I send a small bunch of Hartford to compare."

[The flavor was nearly equal to the Hartford Prolific, and the berries larger and handsomer.]

Union Grape.—A *Newark, N. J.*, correspondent sends us a bunch of grapes, which he says is being cultivated in North-eastern New Jersey under this name: The bunch is loose, and berries small, about the size of Delaware, and of much the same color. The skin is tough and flavor sweet, with a rather coarse aroma. It seems like a delicate improvement on the fox grape.

Preserving Cabbage for Winter.—*C. W., New Brunswick, N. J.*—"Would you inform me whether it would be advisable to winter cabbages in frames, with tight board shutters, (instead of sash); does it tend to blanch or weaken them? I have not tried the above and so would like to know."

[We think there is no plan of preserving cabbage equal to burying them upside down in earth. A very little earth is sufficient, say half an inch. There is no advantage gained by using frames instead of boards. Cabbage will not blanch unless growing. It does not grow in cold weather. Boards are useful to keep off snow or rain, but cabbage can be kept well without them.]

Name of Apple.—*J. B., Geneseo, Ills.*, writes: "You will oblige your subscriber and many others in this part of Illinois, if you will name these apples I send you by mail. Of their quality you must judge. The tree is healthy, hardy, bears very young, and, like the Ben Davis every year. Ripens on the tree from about the tenth of August to middle of September. It is cultivated here under the synonym of August Red. This year the apples are much smaller than I ever saw them before. I think the tree is worthy of more general cultivation here, where so many varieties fail to give satisfaction, and, being a nurseryman, I wish its correct name."

[A little less pentangular than "Angle Sweet," but we think no doubt that variety.]

Fruit prospects in Canada.—A *Paris* correspondent, under date of Sept. 18th, says: "All kinds of fruit are almost total failures here this season, in consequence of drought. We have had no rain for nearly eight weeks. Apples, pears and plums are not half size, and nearly all fallen. Grapes are shrivelled up on the vines."

Name of Insects.—*G. R., Beverly, N. J.*—Sends us a Chrysalis, in shape like a small acorn, smooth and polished as a piece of green malachite, and with a row of gold-like metallic dots half round the upper surface, forming a sort of crown. We are particular in describing it, as several have asked for its name this season, and from its beauty many have no doubt been attracted by it.

[It is the larvæ of a butterfly, with wings orange, banded with broad black lines, of the section *Papilionidæ*, and named *Danaus plexippus*.

Name of Pear.—*R. G., Baltimore, Md.*—"Please give us your opinion of the enclosed pear. It was bought for Flemish Beauty, but competent judges pronounce it to be not that." [Pears seem variable this season. Notwithstanding the nearly round form, it is clearly the Flemish Beauty.]

Name of Plant.—"*Outwest*," *Chicago, Ills.*—"The littte sprig you sent belongs to *Anoda Wrightii*. It is an insignificant Texan weed, but may be bought amongst the seeds of "new, rare and beautiful plants," of any prominent English firm, for about 50 cents a packet."

Grapes from Ohio.—*Robert Linney, gr. J. H. Cooke, Cuyahoga Falls.*—"I have forwarded to you by Express, charges all paid, a bunch of White grapes, for you to tell me through the *Monthly*, what variety you think it is. There are nine more bunches on the vines like that. The vine is two years old, a very strong grower and thick leaf. I have not weighed the bunch, so don't know what it will weigh."

[A very fine bunch of White Malaga (which is not the same as Muscat of Alexandrà as stated by Downing)—weighing within an ounce of 4 lbs.]

Apples growing on Grape Vines.—Our Southern exchanges have a new subject of excitement—*apples have been discovered growing on grape vines.* They are pronounced of first-class quality. One of them has discovered the cause. A Nick-a-jack apple was found growing near the grape, the flowers of the apple impregnated those of the grape, and the apples are the decided result. We were anxious to know more about these wonderful apples, when "luck" who has so often proved our fast friend on an emergency, sent us a box, from the hands of Mr. Jones, of Ridley Creek, near Philadelphia, and they do prove really something very interesting. Although they bear no resemblance to those fair historic fruits which tempted Eve, for these certainly could tempt nobody, they do look like apples; and on cutting them open five or six core-like cavities are displayed, only instead of seeds in these capsules, there are *yellow grubs.* Of course these apples are galls. What is remarkable, seems to be that it does not seem to be the work of any Hymenopterous insect, which usually make these appearances; but of some insect apparently new to the vine. We have not, however, made Entomology a special branch of study; and have sent the specimens to our friend Jacob Stauffer, who will doubtless report in due time.

Rhododendrons.—*A. P., New Brunswick, N. J.*—"There is a species of Rhododendron indigenous to the woods and glens, (ravines) of Western Virginia, is it the Catawbiense?"

[Both R. Catawbiense, and R. maximum, grow in the locality referred to. The former is a dwarfer species, has more highly covered flowers, leaves wider in proportion to their length, and blossoms a month earlier than the R. maximum.

Obituary.—Wm. Hobson, of Philadelphia.—Every old gardener and florist who has been about Philadelphia, knew the subject of this notice. With the exception ot Mr. Buist, he was probably the oldest in the Philadelphia trade. His place opposite the old Bartram Botanic Garden was always visited whenever any rare botanical or garden plant was to be sought for, of which curious class of plants Mr. Hobson was a zealous cultivator. As a man he was always beloved by his friends, and respected by his customers,—thousands of whom are scattered all over the United States and Europe. Being in advanced years, and without any near surviving relatives, he sold out his business in spring, and went to board in Philadelphia. Sometime in June, he was struck dead with apoplexy while walking in the streets. For some reason or another his death was not made known by those he lived with; and only by accident his horticultural associates have but recently learned of the loss of their friend.

Lake Shore Grape Grower's Association.—There will be an Annual Exhibition of Grapes and Wine, at Painesville, Ohio, on October 14th and 15th. The premiums offered are quite liberal; discussions will take place, and a large attendance is anticipated.

NEW AND RARE FRUITS.

The President Wilder Strawberry.—The last No. of the *Journal of Horticulture*, thus describes this variety: "The plant is hardy, robust, vigorous and very productive. The foliage is handsome and well developed; leaf dark-green, roundish, obovate, deeply serrated, of great substance, with stiff, short foot-stalks and stands the heat and cold without injury. The flower-stalk is stiff and erect, the flowers perfect. The fruit is large, some specimens attaining to more than five inches in circumference; and many berries this year weighed more than an ounce avoirdupois each. Their color is brilliant crimson scarlet; form obtusely conical; the flesh rosy-white, very juicy, but sufficiently firm for market; flavor rich and sprightly, inclining to sweet, with a distinct aroma of the Alpine or wood strawberry; seeds small; season late.

This variety was produced in 1861 by Mr. Marshall P. Wilder, from artificial impregnation of Hovey's Seedling with La Constante, the best two varieties, perhaps, that are now under cultivation; La Constante being the best of the foreign kinds ever brought to this country, and Hovey's Seedling being too well known to need any further mention.

For perfection of form, flavor and brilliancy ot color combined, this strawberry exceeds anything that has been produced for a long series of years."

We have now two President Wilder, and two Charles Downing strawberries, which if not too good for our excellent friends, whom we all delight to honor, will we fear prove too much for the nurserymen who after a while will have to sell them.

Madresfield Court Black Grape.—This splendid new grape was exhibited to the meeting of the Fruit Committee of the Royal Horticultural Society, in 1867, and was most deservedly awarded a First-class Certificate. The bunches exhibited weighed from 1½ to 2 lbs. each; they were beautifully and regularly grown, and quite of the same as those of the Muscat of Alexandria, *i. e.*, long, tapering and well shouldered. The berries are large, longish, oval, like those of the Muscat, jet black and covered with a fine bloom like that on the fruit of Black Alicante. The stalk of the bunch is rather fine, erect and of a reddish purple; that of the berry is stout and warted. The skin is tough and membranous; the flesh is firm and juicy, rich and excellent, and has a distinct Muscat flavor. The leaves, which are bristly, deeply lobed, and serrated, have reddish stalks and midribs, like those of the Esperione.

This fine seedling was raised by Mr. Cox, gardener at Madresfield Court, Great Malvern, who has kindly furnished the following information respecting it: "The Grape in question," says Mr. Cox, "was raised some five years ago, and was the only one of a quantity of seedlings which, after fruiting, I considered worth saving. The parents were Muscat of Alexandria, and Black Alicante, crossed both ways. I am therefore in doubt as to which kind produced the seed from which the present seedling was raised. The plant is of robust growth, and short jointed; the eye is prominent, and rather more pointed than that of the Muscat. The fruit sets as freely as that of the Black Hamburg, and ripens a fortnight later than that variety, and a like period earlier than that of the Muscat of Alexandria."

Judging by specimens of this seedling which have been exhibited during the past two seasons, it promises to be one of the finest grapes yet introduced. For flavor it is nearly, if not quite equal to the Muscat of Alexandria; in appearance, size, color, and form, it is all that can be desired; and there is a freeness about the bunch, like that which belongs to the Black Hamburg, that betokens a fine constitution, and capability of being grown to a large size. The stout stalks of the berry, and its tough leathery skin, are also sure indications of its good keeping qualities. Of all grapes in cultivation, Mrs. Pince's Black Muscat comes nearest to it.—A. F. B. in *Cottage Gardener*.

Fourth of July and Tetofsky Apples.—Chas. Downing says in *Prairie Farmer*: "The young wood and leaves of Fourth of July are much darker than Tetofsky, and broader and not so long and pointed as Tetofsky. The leaves of both are very large. Tetofsky is very productive, and apt to drop its fruit before it is fully ripe. The fruit is quite fragrant. The bearing qualities of the Fourth of July I am not acquainted with."

NEW AND RARE PLANTS.

Ampelopsis Veitchii.—This beautiful hardy climber will supply a want long experienced in this valuable class of plants.

A miniature foliaged Virginian Creeper, which clings to any building with the tenacity of the strongest Ivy, and producing in great profusion its dense foliage, of a glossy green shaded with purple, cannot fail to command great attention.

It is of exceedingly rapid growth, requires no nailing, and from earliest spring it produces its beautiful purple tinted leaves so thickly as to form the most perfect coating wherever it is planted, the young shoots being quite purple. The leaves are sometimes divided into three parts and are sometimes entire, turning red in autumn, similar to the old kind.

It received a First-class certificate at the Royal Botanic Society's Show, May 27, '67.—*Gar. Chron.*

Begonia Veitchii.—This remarkable and beautiful plant introduces quite a new feature into the now well-known family of Begonias. It differs in all respects from any other Begonia yet known, having a most showy bloom, of large size, and being hardy.

The following descriptions will convey the best idea of its character and habit:

In the *Botanical Magazine*, for September, 1867, tab. 5663, Dr. Hooker, says: "Of all the species of Begonia known, this is, I think, the finest. With the habit of Saxifragra ciliata, immense flowers of a vivid vermilion cinnabar red, that no colorist can reproduce, it adds the novel feature of being hardy, in certain parts of England at any rate, if not in all. It was discovered by Messrs. Veitch's collector, Mr. Pearce, near Cuzco, Peru, at an elevation of 12,500 ft., and the plants grown in Mr. Veitch's establishments have already given proof sufficient of their hardihood, by withstanding a temperature of 25°, Fahr, with absolute impunity.

"Unwilling as I am to pronounce on the probable or possible adaptation of exotic plants to an English climate, I cannot but believe, that in the South-western Counties, and in the South of Ireland, the Begonia Veitchii will certainly prove one of the most ornamental of border plants."

The *Gardener's Chronicle*, of July 13, 1867, page 734, says: "It is difficult to imagine a more vivid color than the flowers (2 to 2½ inches in diameter) of this superb species present, which are further amongst the largest of the genus, and sweet scented. It was flowered by its introducers, Messrs. Veitch, in the open air, having withstood the severity of last winter with perfect impunity; and hence promises to be one of the greatest acquisitions to our gardens that has been procured for many years.

"As a species, Begonia Veitchii resembles B. cinnabarina, but is a far finer plant, of a totally different habit, resembling a Saxifrage, of the ciliata group in mode of growth and foliage.

It was awarded First-class certificates by the Royal Horticultural Society, July 2. 1868; and Royal Botanic Society, July 3, 1868."

DOMESTIC INTELLIGENCE.

Transactions of Indiana State Horticultural Society.—Being reports of the Spring meeting at Indianapolis, and Summer at Salem, with reports of various committees.

We are indebted to the Treasurer, J. S. Dunlop, Esq., Indianapolis, for a copy of this interesting volume.

About Bones.—In company with a distinguished member of the American Association for the Advancement of Science, we were recently examining the grounds of an Illinois horticulturist. Our horticultural friend evidently had great respect for the *savant*, and received hi every word with almost reverent admiration. Picking up an old bone, the learned scientist remarked: "This is the bone of a horse." The farmer looked doubtingly, but did not express dissent. Soon after our learned friend lifted another, and remarked: "This is the bone of an ox." The farmer was astonished, and asked: "Please tell me how you can so easily distinguish one bone from another? Why is this an ox bone?" "Why don't you see," observed the philosopher, "where the butcher sawed a steak off of the bone?"

It was well for our learned friend that he was not in a region of horse-meat food, or he might have been confounded in his wisdom. As it was, the farmer had only to exclaim that "learning was a wonderful thing;" and for some minutes he was lost in reflection on the astonishing mysteries displayed by the aid of "science."—*Forney's Press.*

A Good Vineyard.—The average yield in the West is about the same as in France, 200 gallons to the acre; in the South, they claim 500 gallons, and in California 800. One bushel of grapes weighing 50 pounds, makes 3½ gallons of good wine and one-half gallon of an inferior quality. A table showing the quantity of wine produced in the year 1860 may prove of some interest:

	Galls.		Galls.
Alabama	18,267	New York	61,407
Arkansas	1,004	New Jersey	21,084
California	246,518	North Carolina	54,063
Connecticut	46,783	Ohio	568,617
Delaware	683	Oregon	2,693
Florida	336	Pennsylvania	38,621
Georgia	27,646	Rhode Island	507
Illinois	50,690	South Carolina	24.964
Indiana	102 865	Tennessee	13,566
Iowa	3,369	Texas	14,149
Kansas	583	Vermont	2,923
Kentucky	179,948	Virginia	40,808
Louisiana	2.912	Wisconsin	6,278
Maine	3 164	District of Columbia	118
Maryland	3,222	Dakota	118
Massachusetts	20.915	Nebraska	671
Michigan	14,427	Nevada	671
Minnesota	412	New Mexico	8,260
Mississippi	7,262	Utah	60
Missouri	27.827	Washington	179
New Hampshire	9.401		
		Total	1,627,200.

—*Rural Gentleman.*

Downer's Kentucky Nurseries.—The *Dixie Farmer* thus describes the grounds of the originator of the Prolific and Charles Downing Strawberries.

In an obscure and somewhat secluded section of Southern Kentucky, Mr. Downer has for more than forty years been ardently pursuing the business of a Horticulturist, gathering around him, proving and propagating all the choicest varieties of Fruits and Flowers, that promise to be suitable for, or adapted to the peculiarities of our Southern and Western climate, and by his steady and zealous application has acquired a practically familiar knowledge of more varieties of our orchard and small fruits than probably any other individual.

His Catalogue embraces the names of 370 varieties of Apples, or 380 including 10 varieties of Siberian Crabs, 190 of Peaches, about 50 Pears and 54 Grapes, besides a general assortment of miscellaneous fruits, both large and small. One of his first works on procuring a new variety is to plant out a tree for bearing or to graft into an older stock to hasten into earlier bearing in this way; he has tested over 300 varieties of apples including all the recommended Southern varieties of which he has from various sources procured specimens of over three hundred names, many of which proved to have synonyms, reducing the actual number of distinct kinds to about 70 and this number Mr. D. thinks might be very considerably reduced with advantage to Nurserymen and orchardists.

He is not chary or niggardly in communicating the many and varied useful practical facts that have come under his observation, neither has Mr. D. confined his operations to Fruits and Fruit Trees alone, but has judiciously united the *Dulce* with the *Utile*, by collecting a choice selection of Roses and other flowering Plants and Shrubs, as well also of Evergreen and ornamental deciduous trees he has a choice collection and some beautiful specimens. His Lawn is graced by one of the finest Norway Spruces in the West, which, with Pines, Hemlock, Beech &c., have a fine effect; but the glory of his Ornamental Trees is a magnificent specimen of the Magnolia, of which Mr. D. has not been able to get the correct name. Some botanists, who have examined it, pronounce it the result of a cross of M. grandiflora and M. glauca; it has the towering habits of growth of the M. grandiflora, and the leaf cones and fragrance of the glauca, and the writer believes it belongs to the latter without any admixture, but is a grand improvement in habit of growth over the normal type of its species. Here also is a fine specimen of Magnolia macrophylla bearing a fine crop of its rich looking seed bearing cones.

Grape Eating.—A corespondent of *Colman's Rural World* says: "I visited St. Louis the other day and found everybody eating grapes. The boys were eating them and the girls were eating them—old folks and young folks were eating them—and I asked why is this? I was answered because they are so cheap. I enquired the price. Eight to ten cents per pound for fine Concords. ripe, luscious clusters that would make one's mouth water to look at. No wonder everybody was eating them. I was told there was a very heavy demand for them on account of their general use.

Dwarf pears.—Some years ago there was quite a dwarf pear fever raged through the North. The good people up there do everything by wholesale, and everybody went into the dwarf pear trees. But, as was reasonably to have been anticipated, a large majority bought without judgment, planted without knowledge, and had their pains for their pay. So of recent years there has been quite a disposition to cry down dwarf pears with the same lack of discrimination that they were but a short time ago extolled. The truth is, that out of the almost endless variety put upon the market, there are comparatively very few of any real value anywhere, and not more than a dozen or two that will ever prove satisfactory in general cultivation.—*Dixie Farmer.*

Potatoes—It seems that if potatoes are peeled, macerated about thirty-six hours in water, to which eight per cent. of sulphuric acid has been added, well washed with water, dried in blotting paper, and then in hot sand for several days, on plates of chalk or plaster of Paris, which are changed daily, being compressed at the same time, an excellent imitation for meerschaum, answering well for the carver, for any purpose not requiring a high temperature will be obtained.

But this is not all, for if, after the potatoes have been thus treated, they are further boiled in a sollution containing nineteen per cent. soda, a substance resembling stag's horn, and which may be used for knife-handles, ect., will be formed. Nor is the potato the only vegetable capable of such transformations. Turnips are equally susceptible of conversion into horn; and carrots, by a similar process may even be changed into a capital imitation of the coral, which is just now a fashionable ornament.—*American Journal of Mining.*

A Wonderful Isabella vine.—A correspondent of *Ohio Farmer*, says of a vine in the front door yard of Mr. Simon Wallace, Union Street, four doors north of Euclid, East Cleveland, and was by him planted near his kitchen door, fourteen years ago this spring.—It is now nine inches in diameter at its collar; five or six main stems leading therefrom are trained up over a rough arbor of fifty-six feet in length by twenty-four feet wide. Another arm winds round one end of the house, covering entirely its side, say twenty-two and twenty-four feet and yet another arm passes in an opposite direction to the front of the house where, after covering the entire side, its lateral stems take possession of the tops of two sweet cherry trees thirty feet high, and of an area of twenty odd feet. The vine has never been trimmed; but has almost literally had its own way, since the cutting was stuck in the ground.

Hardy Apples For Iowa.—Red Astrachan, Sops of Wine, Duchess of Oldenburg, Saxton, St. Lawrence, Fameuse, Plumb's Cider, Perry Russet, Blue Pearmain. For sweet, add Sweet June and Talman Sweet. Here are eleven varieties that come under the head of *Iron Clads*. Utter's Large Red and Ben Davis promise well, but need a few more years' trial. The above are all red, or striped, bright colored, good sized, productive, saleable fruit, of good to best quality, except Blue Pearmain is sometimes a shy bearer, and the sweets are yellow in color.—D. W. Adams in *Iowa Homestead.*

FOREIGN INTELLIGENCE.

Propagating Pansies.—It is hardly necessary to advert to the easy manner in which the Pansy is propagated. Cuttings of the small wiry shoots from the centre of the plant are best, but the outside branches will also grow. All the preparation that is requred is a little river sand spread over any border and slightly worked-in, a little more sand being placed on the top; then the cuttings may be put in and shaded for a week or two, watering of course when necessary. It is seldom that they are struck under glass.—*Cottage Gardener.*

Vine Culture in England.—Grapes and Vine growing in these days are assuming such a degree of importance as to call forth the best devices and ingenuity of the practical horticulturist.

Gardening as generally practised, can scarcely be looked upon as a remunerative investment; were it so, its place and position would be vastly elevated. If there be one thing, however, more than another that is capable of yielding a fair return it is Vine-culture, and that unquestionably is one of the principal reasons for the rapidly-extending popularity of Grape-growing under glass.—*Gardeners' Chronicle.*

Vineyard Temperature in Germany.—A traveller, through the Hock Vineyards of Germany, says:

In July and part of August our summer would compare favourably with the northern part of the United States. For days and days in July and August the thermometer stood at 28°, which was up among the nineties by Fahrenheit's scale. Generally speaking, when it was so hot in the day-time, it was cool and pleasant in the evening. The effect of so much sunshine and so much hot weather has been to make the grapes both rich and sweet. The quality will be very fine, but the quantity very much less.

The wine merchants, however, have a way of making both ends meet, and they are honest enough to own to some very harmless adulterations, in short seasons, such as mixing the sour wines produced in wet years with the sweet wines of warm seasons. They allege, however, that with sufficient age, this mixture becomes very fine wine, and very palatable.

The dark-skinned grape generally ripens sooner than the white, but it is not so sweet or fragrant, and in consequence it is not so generally produced. The Burgundy grape is said only to flourish well in clay soils; and from this grape, which is grown to a small extent in the Rhine Gau and the Palatinate, is made the famous red wine known as Asmanhausen and Ingelheimer. The people of this country do not drink the red wine so much as the white.

The Hock vineyards do not contain, all told, more than 75 to 80 acres, and in ordinary and good years the produce is not over 600 "stuck" (a stuck is about 1,500 bottles), which gives us a total of 900,000 bottles; yet we are assured by reliable men engaged in the wine trade, that there are sold every year at the auctions no less than 6,000 stucks, all purporting to be genuine Hock.—*Cottage Gardener.*

Synonyms of Pines.—Pinus insignis and Pinus radiata are, in our opinion, the same thing. A cluster of cones has been gathered, of which two were radiata and three insignis. A distinction is by some still sought to be made, and as the form of cone of radiata is the more developed form, and occurs more frequently in trees growing in a more southern latitude, there may be some slight climatal difference. The specimen sent is a good typical insignis. P. Salzmanni is undoubtedly the same as P. pyrenaica. M. Henri Vilmorin, who possesses the type of the original Salzmanni, assures us that he has carefully compared it after visiting Pinus pyrenaica in its native habitat, and is positive that they are the same. Notwithstanding the apparent difference between your recent specimen of Salzmanni and the older one, taken from Vilmorin's tree, we are inclined to think they may be the same (P. pyrenaica). P. pyrenaica, P. austriaca, and P. Pallasiana, are all so nearly identical with P. Laricio that they can hardly be called different species. They are climatal forms of the same tree, and although extreme forms can be shown distinct enough, others from the same forests can be picked out perfectly identical, with the characters of any or all of the other three. The habit of the trees (of which you say nothing) is one of the best characters for distinguishing them.—A. Murray, in *Gardeners' Chronicle.*

Polycarpa Maximowiczi, is advertised as an hardy ornamental fruit tree, from North Japan. First-rate ornamental plant, and said to produce a fine Plum.

Gardening—The pleasures arising from the culture of flowers are harmless and pure; a streak, a tint, a shade becomes a triumph, which, though often obtained by chance, is secured alone by morning care, by evening caution, and the vigilance of days. It is an employment which, in its various grades, excludes neither the opulent nor the indigent; teems with boundless variety, and affords an unceasing excitement to emulation, without contention or ill-will.

There is no other pursuit alike calculated for peer or peasant in which the distinctions are so trivial, for the cottager may possess and enjoy the same beauteous rose or fragrant mignonette in his little plot or his window that occupies a place in the garden of the richest. The clear light of heaven, the sweet fresh air, the verdure of the fields, the delicacy of form and richness of color with which bounteous nature supplies us on every side, in the almost inexhaustible variety of her horticultural and floral treasures, are all sources of the most unalloyed pleasure; and it is a wise dispensation of the Giver of all Good that this gratification of the senses of sight and smell, whilst beholding the elegant shape of plants and inhaling the exquisite perfume of their flowers, is an enjoyment within the reach of all who choose

to seek it. There are few surer tests of a happy home within than the flower-decorated window and neat-kept garden; and there is no occupation for the leisure hour more calculated to keep it so, or to sooth the mind. It yields pleasure without surfeit: the more we advance the more eager we become. And how unlike this is to most of our worldly engagements.—*Gardeners' Magazene.*

Gardening Notes from Russia.—Soon after my arrival in St. Petersburgh some years ago, I called on Dr. Regel and presented him with your parcel * * * He received me very kindly, and showed me every attention. At this distant date it would be unfair to speak of the Botanic Garden in the Russian capital, even as I then found it, because I have now but a very faint recollection of what I saw, and besides the month of September is not a good time to form an opinion of a garden in so northern a latitude. Still I may say that after going over the grounds, and looking through the numerous plant-houses, my impression was not very favorable, especially with respect to cultivation. In particular the old system of propping up the plants with long sticks seemed to be in great favor.

There is an extensive library connected with the establishment, and I remember that in looking over it, one of the very first books that caught my attention was "Moore's Handbook of British Ferns." I hope to be again in St. Petersburgh before long, and I shall not fail to call on Dr. Regel, and send you a full account of the garden under his care, as it now is.

Kharkoff, or Harkoff as it is pronounced in Russian, is about 700 versts from Moscow, and 400, I am told, from Odessa. Till very lately it was only to be reached by diligence, which took at least four or five days and nights, very often seven or eight, to arrive one way or the other. Now very fortunately a railway has, or will soon be, opened between Moscow and Koursk, which in future will very much shorten the time required to make the journey. In about two years more, I am informed, the line is to be completed as far as Kharkoff. This is a large town, with a population of at least 70,000. It is the centre of an immense and highly fertile agricultural district or country, which is studded with numerous woods and forests, but has no rivers of any note. Having a university, with three Government schools, such a town could not dispense with a botanic garden, but this, however, is chiefly esteemed as a public park and promenade. The botanical and horticultural departments are not patronised and kept up as they ought to be; and yet the collections are good. People here are generally very indifferent to the charms of Nature, and see but little beauty in trees and plants, at least they prefer to spend money on trinkets and trifles. There are not wanting, however, pedantic pretenders to botanical and horticultural knowledge, and for such people the most ignorant French *paysan* is the fittest counsellor.

In this part of the country at least gardeneng is in the most primitive state, and the few gardeners there, here and there, are Germans; but they are all on a very small scale, getting only a modest living with a good deal of hard work. Every year young trees are planted in the open places about the town, but in general they all perish after a few months; because those who are entrusted with the planting know nothing about the conditions required to insure success. The trees selected are not suited to the situation and soil; the operation of lifting and planting is entrusted to the most ignorant workmen, and after being stuck in the ground with their roots nearly 3 feet below the surface, the trees are left to take care of themselves. There is besides little or no chance of trees thriving here unless thay are planted in the autumn, owing to the great heat and want of rain in the spring and summer months.—*Gardeners' Chronicle.*

The best Plants and Flowers in England.—Those which took premiums at the July Show of the Royal Botanic Society at London, were as follows, which we take from the *Gardener's Chronicle*:

In the Class of 12 Stove and Greenhouse plants, the first prize was to Mr. Baines, gr to H. Micholls, Esq., Bowden, near Manchester, who furnished remarkably fine examples of Ixora javanica, 4 feet high, and some 3 feet through, loaded with blossoms; Clerodendron Balfourii, with layer upon layer of pure white and glowing scarlet inflorescence, the two colors contrasting beautifully with each other; Dipladenia crassinoda and Erica oblata, both fine plants; Bougainvillea glabra, an Azalea, still loaded with flowers; Genetyllis tulipifera, somewhat dull and ineffective, though a large fine plant, covered with flowers; Dracophyllum gracile; an Everlasting; Ixora coccinea, a well-managed Kalosanthes, and the variety of Erica tricolor called Holfordii. Mr. Peed, gr. to Mrs. Tredwell, who was second, had a fine plant of Clerodendron Balfourii somewhat out of condition ; Ixora salicifolia, coming beautifully into bloom ; a grand Allamanda grandiflora, a mass of clear yellow blossoms ; Franciscea calycina, with an unusual amount of color in it ; Ixora coccinea, with numerous fine heads of bloom ; that universal favorite, Stephanotis floribunda, and others. In other collections, which came from Messrs. Donald & Wheeler, we noticed fine examples of Statice macrophylla, robust and well flowered ; the lively Dipladenia amabilis, with which for brilliancy of color none others of its class will bear comparison ; Dipladenia magnifica, and other well known plants.

In the Class of 10 fine Foliaged Plants, the first prize was awarded to Mr. Williams, who showed fine specimens of Caladium Lowii, with beautiful leaves, prettily ornamented with prominent pale green ribs ; Croton angustifolium, variegated Aloe-leaved Yucca, Cycas revoluta, Tree Ferns, Dracœnas, Pandanads and Palms. Mr. Burley, to whom the second prize was awarded, had the handsome Musa vittata, some fine Tree Ferns, Dracœna elegantissima, Crotons and Cycads. From Messrs. Glendinning, who were third, came Pandanus javanicus variegatus, Alocasia macrorhiza, Dracœna fragrans, Theophrasta imperialis, Platycerium grande, Crotons and others.

One of the best collections in the Amateurs' Class came from Mr. Fairbairn, gr to the Duke of Northumberland at Sion, who furnished specimens of Alocasia metallica, macrorhiza, and zebrina, Anthurium magnificum and acaule, Thamnopteris Nidus, Palms and other fine plants. Mr. Baines likewise staged a collection which was awarded an equal first prize, and in which were wonderfully fine examples of Sarracenia flava and purpurea, the last completely filling a large-sized tub with pitchers and foliage. From Mr. Smith, gr to T. Nixon, Esq., who was second, came the beautiful golden-veined Sanchezia nobilis variegata, Cyanophyllum magnificum and its near relation Sphærogyne latifolia, the extremely handsome Maranta Veitchii, whose delicate shades of coloring almost defy imitation : M. fasciata, the Bird's nest Fern (Thamnopteris Nidus), Alocasia macrorhiza and others. Mr. Taylor, gr to J. Yates, Esq., also exhibited in this class various hard-leaved plants, such as Encephalartos and Cycads.

Orchids were, as a whole, in good condition, but we miss from among them the extraordinary Saccolabiums, Cyrtopodiums, and others, which were wont to make their appearance in days gone by at Chiswick. Nevertheless Mr. Penny, gr to H. H. Gibbs, Esq., showed a beautiful group of fifteen plants, among which were the scarce Aerides Schroderi, a magnificent variety of Cattleya Mossiæ, a finely flowered Odontoglossum cordatum, Cypripedium barbatum superbum, equally fine, the showy Lælia purpurata, the yellow-blossomed Cattleya citrina, and Anguloa Ruckeri, the last bearing seven of its large Tulip-like flowers. From Mr. Wilson, gr to W. Marshall, Esq., who stood second, came Odontoglossum Schillerianum, a species in the way of grande, but paler, three fine Aerides, the pretty little Dendrobium Parishii, the singular-looking Odontoglossum nævium majus, Cypripedium Stonei, still in good condition, and some good Cattleyas and Lælias. Mr. Gedney, gr to Rev. W. Ellis, who was third, furnished Saccolabiums guttatum and retusum, the singular-looking rather than handsome Brasavola Digbyana, with a large fringed lip ; the bright, purplish, crimson-flowered Cattleya superba, Lælia purpurata, a mass of blossoms ; one or two Lady's Slippers, and the little white-blossomed Odontoglossom pulchellum. Mr. Peed also showed in this class.

Groups of 8 Orchids came from Mr. Hill, gr to R. Hanbury, Esq., Mr. Burnett, gr to William Terry, Esq., and Mr. Young and Mr. Wheeler. Among these we noticed the rare Chysis Limminghii, Cattleya Aclandiæ, and Lælia purpurata, with an unusually dark color ; Calanthes, both white and violet and Aerides of different sorts.

Messrs. Williams and Jackson contributed groups of 6 Orchids, in which were fine plants of Anguloa Ruckeri, Vanda suavis, Aerides, Lælias and Lady's Slippers.

From Mr. Marshall came two new Cattleyas, one from Guatemala, with yellow blossoms ; the other with warm brown flowers and a deep purple lip, called C. Prinzii. Both were awarded First-class certificates.

Messrs. Veitch contributed a fine group of new or rare plants, among which the following received certificates ; viz., Alocasia, Chelsoni, Croton Veitchii, with long leaves, prettily variegated with red-yellow ; Dracœna Chelsoni, and the South Sea Island D. Macleayi, a Chilian plant named Puya sp., but which is possibly a Dyckia, with hard spiny leaves, and a great branching upright flowering stem, bearing green blossoms, with a bright metallic lustre, and prominent orange anthers, altogether a singular looking plant, which is sure to meet with favor as a curiosity. From the same firm also came a Peruvian Adiantum, a large-leaved species of Cinchona, a hardy climber called Ampelopsis Veitchii, and various fine Gloxinias, especially Don Louis de Portugal, Fleur de Flandre, Mons. Alphand and Souvenir de Brongival.

Messrs. Downie, Laird & Laing furnished some nice Caladiums ; Mr. Williams a handsome Amaryllis, Thrinax nobilis, Trichomanes crispum, and maximum, and other interesting plants. From Mr. Tanton came a so-called variety of Allamanda Hendersoni. Messrs. Cole sent their Lomaria gibba crispa, to which a first-class certificate was awarded, and a similar award was made to Mr. Burley for Caryota sobolifera magnifica. From Messrs. Carter came a basketful of the pretty Trichinium Manglesii.

Fuchsias were shown on this occasion in beautiful condition by Messrs. Brockwell, Weston, Weeks, and August—the whole of the collections consisting of well-grown and beautifully bloomed plants, among which, however, there was little novelty.

Among Pelargoniums the best groups came from Mr. Fraser, whose Fancy sorts, especially, were truly beautiful. They consisted of Hebe, Anne Page, Delicatum, Miss in her Teens, Cloth of Silver and Constance. The ordinary sorts from the same exhibitor were Maid of Honor, Lord Clyde, Progress, Caractacus, Decision, Pericles, Wm. Hoyle, Desdemona and Amy. Mr. Ward was first in the Amateurs' class with Desdemona, Fairest of the Fair, Caractacus, Pericles, Sunny Memories, Maid of Honor, Conflagration, Mary Hoyle and Beacon. Scarlet varieties were shown in considerable numbers, and all of them well flowered—though in some instances they were what is termed “drawn.’, Clipper stood foremost among bright scarlets, M. Vaucher among white sorts, and Rose Rendatler among rose-flowered kinds. Messrs. Catlin, Fraser, Hawes and Weston were the most successful exhibitors of them. Fine groups of Tricolors came from Messrs. E. G. Henderson, Carter, Stevens and Smith.

Fruit was shown in quantity and in excellent condition. From Mr. Barnes, of Bicton, came a wonderful collection of Pine-apples, in which were Queens upwards of 5 lb., Enville, Charlotte Rothschild, a Black Prince weighing 12¼ lb., and measuring 22 inches round and 16 inches in height ; a Providence, Black Jamaica, Prickly Cayenne, an Old Globe, which with Mr. Barnes often weighs 12 lb.; copper-colored Montserrat, by no means a handsome Pine, but one which is well flavored ; Brown Sugar-Loaf, 6½ lb., and others all fine fruit. The best Queens came from Messrs. Ward, Davis and Carmicheal, and the best Providences from Messrs. Hammer, Young and Clarke.

Of collections of fruit there were no fewer than seven, all good. The Gold Medal was won by Mr. Miller, gr to Earl Craven, with a magnificent collection, in which were two fine Queen Pines, Foster's Seedling and Black Hamburg Grapes, the latter in beautiful condition ; two finely-ripened Trentham Hybrid Melons, large and black Waterloo Cherries, Elruge Nectarines, and Violet Hative Peaches, both possessing unusually fine color, and British Queen Strawberries. Mr. Clarke, gr to Earl Cowper, who was second, sent Muscat and Black Hamburg grapes, a Providence Pine, Gallande Peaches, and Pitmaston Orange Nectarines, Heckfield Hybrid Melon and beautiful Elton Pine Strawberries. From Mr. Bannerman, gr to Lord Bagot, came Buckland Sweet-water and Black Hamburg Grapes, a Queen Pine Apple, Golden Perfection Melon, Elruge Nectarines, Royal George Peaches and Oscar Strawberries. Mr. Johnston gr to the Marquis of Aylesbury, sent Black Hamburg and Tottenham Muscat grapes, Queen of Pines, two Melons, Peaches and Nectarines and British Queen and Empress Eugenie strawberries. From Mr. Miles, gr to Lord Carrington, came fine examples of the Chaptal grape, a white kind, and other good fruit. Mr. Masters, gr to Earl Macclesfield, also showed a good collection.

Among the whole of the many varieties of Roses shown, none where finer than Black Prince, Leopold I, and Alfred Colomb, and glorious crimson kinds, the latter, perhaps, the brighter of the three, and among yellow sorts Marchal Neil stood immeasurably in advance o all competitors, its color this hot, dry season being deeper and even richer than usual.

In the class for 72 single trusses, Mr. Cant, of Colchester, took the first prize with, among others, Horace Vernet, Fisher Holmes, Mrs Rivers, Comtesse de Chabrilliant, Mathurin Regnier, Marie Baumann, Anna de Diesbach, Vicomtesse Decazes, Senateur Vaisse, Marechal Vaillant, Jean Lambert, Paul Verdier, Olivier Delhomme, Beauty of Waltham, Dr. Andry, Exposition de Brie, Mdlle. Bonnaire, Charles

Lefebvre, Marechal Neil, Alfred Colomb, Leopold Premier, Mdlle. Maria Rady, Niphetos, Duchess de Caylus, Xavier Olibo, Madame Verdier, Cloth of Gold and Marguerite de St. Amand. Messrs. Paul & Son were second, with among others, Mdlle. Marie Rady, Madame Furtado, Exposition de Brie, Camille Bernardin, Prince de Portia, Felix Genero, Xavier Olibo, Alfred Colomb, Horace Vernet, Madame Victor Verdier, Pierre Notting, Black Prince, Monsieur Furtado, and Leopold Premier. Mr. Fraser, of Lea Bridge Road, who was third, had, among others, Madame Bellenden Kerr, Gloire de Vitry, Andre Leroy, Jean Lambert, Dr. Andry, Senateur Vaisse and Duc de Rohan. Messrs. Francis, of Hertford, were fourth and Mr. Clarke, Streatham Plant, Brixton, also exhibited in this class.

In the class for 24 Hybrid Perpetuals, three trusses of each, the first prize was awarded to Messrs. Perkins, of Coventry, who furnished fine trusses of Lord Clyde, Prince de Portia, Beauty of Waltham, Camille Bernardin, Mllde. Marguerite Dombrain, John Hopper, Duc de Rohan, Madame Victor Verdier, Pierre Notting, Duchess de Caylus, Baron Gonella, Mdlle. Maria Rady, Mdlle. Bonnaire, Marguerite de St. Amand, Alfred Colomb, Charles Lefebvre, Mathurin Regnier, and Madame Charles Wood. Mr. Cant, who was second, and Messrs Lee, who who were third, had flowers of the above and other varieties. A fourth prize was awarded to Mr. Clarke.

In the class for 18 new Roses of 1865 or 1866, Messrs. Perkins, of Coventry, received the first prize for a stand of Black Prince, shaded dark crimson, large and full, was conspicuous.—Among others were Gloire De Ducher, like the last, but as shown not so full or good; Horace Vernet, Jean Lambert, Mdlle. Maria Rady, Camille Bernardin and Prince de Portia, crimson scarlet, and very effective as regards color; Alfred Colomb, cherry red and very bright; Thorin, bright rose; Mdlle. Marguerite Dombrain, Comtesse de Jaucourt, Charles Verdier and Madame Eugene Appert, shades of rose and pink. Mr. Cant, who was second, had besides some of those just named, Madame George Paul, crimson scarlet; Mdlle. Annie Wood, fine red; Hippolite Flandrin, salmon rose; Exposition de Brie, Antoine Ducher, Napoleon III., Mrs. Berners, lilac rose with a glow of scarlet in the centre; Mrs. Ward, peach; and others. Messrs. Paul & Son were third; Mr. Coppin fourth. The first prize in class 10, for 12 trusses of any new Rose of 1866, was awarded to Mr. Cant for Antoine Ducher; and extra prizes were awarded to Alfred Colomb, from Messrs. Lee and Mr. Fraser.

Of yellow Roses beautiful trusses were contributed by Messrs. Cant, Fraser, Hedge and Stoddart. Marechel Niel from Mr. Cant was remarkable, not only for the size of the blooms but also for their rich golden color. Other kinds were Gloire de Dijon, Celine Forestier, Vicomtesse Decazes, La Boule d'Or, Cloth of Gold, Solfaterre, Madame Falcot, and Narcisse, of which Mr. Hedge had fine trusses.

Of Tea-scented and Noisette Roses the best 12 in the Amateurs' class were contributed by Mr. Hedge; among them were Souvenir d'un Ami, Moiret, Souvenir d'Elise Vardon, Marechal Niel, Triomphe de Rennes, Cornelia Koch, Gloire de Bordeaux. Niphetos, Devoniensis, La Roule d'Or, Gloire de Dijon and Adam. Mr. Stoddart, who was second, had Homer, pale yellow edged with pink, Niphetos and Adam. In the Nurserymen's class for the same Roses Messrs. Paul & Son and Mr. Cant took first and second prizes.

The best stand of 12 single blooms, shown in an open class, came from Mr. Cant, and consisted of Charles Lefebvre, Marchel Niel, Anna de Diesbach, Marechal Vaillant, Xavier Olibo, Alfred Colomb, Madame Caillat, Madame Moreau, Niphetos, John Hopper, Madame C. Wood and Exposition de Brie. Messrs. Perkins were second and Mr. Coppin third.

HORTICULTURAL NOTICES.

PENNSYLVANIA HORTICULTURAL SOCIETY.

Just as we are closing up our magazine, the Pennsylvania Horticultural Society is opening its annual exhibition, and we have only space for the following from the daily *Press* and *North American*, Philadelphia newspapers, and which will doubtless interest our readers. We shall give a more detailed account

next month, after the committees have reported. We can only say here that Philadelphia—horticultural Philadelphia—has covered itself with glory. The exhibition is a credit to the old fame of the State:

"The managers of the Horticultural Society are much gratified by the great success of their exhibition. It is conceded to be equal to anything which gave *eclat* to the society in its palmiest days. The exhibitors are so numerous that we cannot give a sketch of the exhibition and do justice to all. We have the few following hurried notes of some of the principal items to be seen. Our readers will, however, get a clearer view for themselves.

On entering the hall the most prominent object of interest is the tropical scene at the back of the stage. This is made up of a collection of most beautiful plants from Borneo, Java, Brazil and other points, contributed by Mr. Graham, of the Thompson Street nurseries. Interspersed amongst these are statuary suited to the scene, contributed by Gossin & McMahon, terra-cotta manufacturers of this city, and through these the stream of water flows.

On each side of the hall on entering, are two very fine Banana trees, from the garden of Jas. N. Wright. Joshua Longstreth, one of the oldest patrons of the society, has a collection of very large specimen plants. Near these Robert Buist has a collection of rare plants, some of which are so valuable that few have money to buy them. One of these is called *Alocasia Lowi*, which looks more like a fossil renovated by Waterhouse Hawkins than a genuine representative of the present age. Mr. Matthew Baird has a remarkable Fan Palm, amongst a beautiful collection of Caladiums and other plants. Dr. Camac has one of the largest collections of plants in the hall, amongst which, a specimen of *Cyanophyllum magnificum* attracts universal attention. The leaves appear as if cut out of the richest velvet, marked by the most regular of white lines.

Mr. David White's collection is remarkable as the work of one of our city merchant's own hands as an evening recreation. His "rat-tail cactus" looks as if it might be the veritable plant which Mike Walsh's botanical friend thought he had before he "smelt the rat"—the real rat planted in the pot, tail out, which Mike presented to him.

In J. Vaughan Merrick's collection many visitors hang around the new *Abutilon vexillaris*, covered with its beautiful blossoms. Here also is an india-rubber tree, and many other fine plants.

Mrs. Baldwin has some noble plants, mostly ferns and palms, besides another large lot on the entry to the foyer up stairs.

S. C. Borden contributes a magnificent pomegranate tree loaded with fruit. Germantown is worthily represented by handsome plants of Begonias and Dracœnas, from the garden of G. L. Harrison, Esq. Amongst the plants from Mr. Bailey of the Graham Nurseries, before mentioned, the gardeners point out a new Cissus, as one of the great attractions of the exhibition. Mr. E. W. Clark, of Germantown, sends a Rondoletia 6 feet high, covered with blossoms, which the gardeners say is a first-class specimen. It is a native of the Cape of Good Hope. The pretty German Asters with the collection of things about them, are from Mr. J. B. Heyl. There are numerous other exhibitors in smaller lots, but adding much to the interest of the exhibition.

The cut flowers, bouquets, designs, &c., are much fuller than usual. A very handsome triumphal arch has been contributed by the Graham nurseries. J. V. Merrick and Joshua Longstreth have two large and handsome pyramids, made up in elegant taste, by their gardeners. Gerhardt Schmidt, R. Buist, and Henry A. Dreer have Dahlias. Thomas Meehan exhibits one hundred kinds of cut flowers. R. Scott and Mr. Bailey, large lists of roses; and Gebhard Huster, gardener to General Cummings, has numerous articles in this class. Every one admires the cut grasses of Mr. Raabe, who has also a new idea in the shape of fans—real fans made up of fragrant flowers. Mr. Dreer, who has "worked like a trooper" to get up this great exhibition for our citizens, has some reward in the admiration excited by his Gladiolus.

We can devote no more room to the flowers—the fruits are sights to see. No such a show of grapes were ever before our citizens; many scores of varieties, and all in the highest degrees of excellence. Amongst what were pointed out to us as special rarities or superior specimens are natives from D. W. Herstine, T. T. Mather, and C. H. Rogers; Muscat of Alexandria, from J. N. Wright; Muscat Hamburg, and many other kinds of Rogers' hybrid grapes, from S. V. Merrick; White Nice, from J. V. Merrick; Concord, from Lorin Blodgett; Isabellas, something like those of the olden time, by Arthur Fricke; Clinton by T. Meehan; Telegraph, by Mrs. H. Robbins, and others from Colonel Cummings, J. E. Mitchell, &c. Mr. Knox, of Pittsburg, was erecting mammoth pyramids, to display some dozens of varieties for which he is famous; but the fruit will not be up till to-morrow. The new kind—Martha—will be among them.

The pears, apples and peaches are not as numerous as in former years, but fine what there are of them. Of pears, Wm. Parry has 40 varieties; Mr. Chamberlain has very large Bartletts; Isaac C. Price, butter pears which remind us of our grandmother's time, since when this luscious kind is seldom seen; peaches, very large, from Thos. M. Cullen, and apples, 30 varieties, from S. W. Noble.

One of the tables most visited by ladies is that of preserved fruit and wax flowers. Of the former, W. A. Leavitt and S. R. Rowley have a very large display, put up in great variety of jars, so as to afford a rare chance to see which kind is best. R. S. Teal and Mrs. H. Phillips have admirable wax fruit, flowers and designs. As to the vegetables, only a sight of them will do justice.—*Forney's Press.*

As some beautiful plant springs from a hard beaten plot of ground at the waving of a Fakir's wand, so last night, despite a pelting shower, opened the annual exhibition of the Pennsylvania Horticultural Society.

At the spectacle we confess to experiencing a very agreeable surprise. It is very much the best that has ever been held in Philadelphia; and in this respect Philadelphia has always taken the lead of the entire United States. The superintendent of the national propagating gardens has largely represented that extensive establishment, and from the most distant sections of this State, Maryland, Delaware, and New Jersey, the offerings have come in.

The contributions of amateurs by far exceed in number those of the professional horticulturists. Indeed, it is not unlikely that the former will carry off the greater number of honors. The coup d'œil as you enter the hall suggests a beautiful fairy scene. Instead of "ingens fluvius irrigat hortum," we may read that a stage scene representing a lake like that of Como forms the background to a cataract of natural water, that flashing in the light of gas jets, tumbles over rock work and disappears in a cavern below. This meets the eye at the extremity of the hall as the door is opened. In the centre a splendid fountain tosses its perfumed spray into the air, beneath which, in a broad basin, amid aquatic plants, glittering fishes disport themselves. The atmosphere is redolent of the perfume of rare plants, of the honeyed scent of grapes, of the odor that arises from glowing canteloupes, figs and pomegranates. The conservatories of our men of wealth have been opened to contribute their vegetative treasures. The South American fern waves its fronds upon the stage, under the spray of the waterfall; the date palm, the banana, the cinnamon, camphor, the Inda rubber tree are there seen growing as in the heart of a Brazilian forest.

But more important to us than all these things —which are mere accessories—may be seen what our agriculturists at home are doing; what is the result of the work of plain, practical men. Here is seen how the common wild flower is developed into gorgeous bloom, how the ordinary potato is changed into an esculent that compares with its original seed as Flora Temple compares to a cart horse; how the common musk melon is developed into a fruit of which every fragment is like so much crystalized wine.

The flowers, the floral arches, the aquaria full of gold fish, the homely every-day-used vegetables—all the offerings, in short, make up a very splendid display. Our reporter is most happy to assert, upon the basis of some considerable experience, that the equal of this exhibition has not hitherto been witnessed in this country.—*North American.*

KENTUCKY HORTICULTURAL SOCIETY.

These exhibitions are held at Masonic Temple in Louisville, and as the report indicates, are intensely interesting. Specimens of fine fruits are sent from all parts of the State, and sold for the benefit of the contributors; the Society deducting a certain percentage to pay expenses. The Kentucky Horticultural Society has been in successful operation upwards of twenty five years, and numbers among its members some of the most distinguished and most intelligent gentlemen residing in Louisville and vicinity. Such an institution is an ornament to our State, and we hope our readers will not only attend its meetings when they visit Louisville, but will send such specimens of fruit they may have, which may be really choice. The reports of the Society are valuable for future reference, and should be preserved; they show the best kinds of fruits to cultivate; which are the most popular and successful varieties, and the order and time of ripening.—*Dixie Farmer.*

Thı nthly.

Hortic ral Affairs.

Old Series, ies *Vol. I. No.* 11.

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The Gardener's Monthly.

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

Old Series, Vol. X. *NOVEMBER, 1868.* *New Series Vol. I.* *No.* 11.

HINTS FOR NOVEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

This department begins to present to many minds a dreary appearance, and yet the rustling of the dry leaves and the whistling of the winds, through naked boughs, and the plaintive voices of trembling evergreens, have a charm for many which not even the cosiest city parlor, with the most agreeable of friend to chat with, could favorably compare. We often try to think one month better than another,—which we would prefer for joyous pleasure,—which we would rather select as a month to die in, but find none to choose from. All have special points to admire. Certainly the fall of the leaf in the country is not the least enjoyable of any.

But to more practical matters. These leaves have to be gathered up. They are excellent to mix with hot bed material, and where practicable, should be saved for this purpose. They do not heat so rapidly as stable manure, and in this have an advantage as tempering its violence, making it last longer, and maintaining a more regular heat. They are excellent material to put round cold frames to protect half hardy plants. A board is put up the height of the frame boards, and about a foot or more from them, and the leaves filled in between. If the plants are somewhat tender, the bottom of the frames may be filled in a few feet with the leaves. Much heat is thrown off during the decomposition of the leaves, which though not enough to keep out severe frost, yet modifies somewhat the temperature. These leaves after they have been two or three years decaying, make admirable stuff for potting and flowers in general.

Leaves are the natural protectors of grass ; clearing them from lawns, it has a tendency to impoverish the vegetation. Mowing of course also weakens a lawn. This makes an occasional top dressing advisable,—any decaying matter will do. This is the season to apply it.

Sometimes lawns, after frequent mowings, become so weak, that not even manurings will bring them up again ; for, as we have often taught our readers, cutting off green herbage weakens vitality. When this is the case, small Veronicas and other minute weeds, which the scythe does not cut, grow strong enough to crowd out the enfeebled grass. We have seen some resort to weeding in such cases with little beneficial results. The best plan is to break up the lawn at this season, let it lie all winter, and seed it again anew in spring. The Blue Grass of Kentucky or Green Grass of Pennsylvania—botanically *Poa pratensis*—is better than any "mixture" for making a first-class American lawn. For reasons we have given, lawns run out faster when a mowing machine is used, than when scythe cut, but the advantages of a machine are so great, that we wonder that they are not in more general use. The Duchess Co., N. York, ones are excellent for the purpose.

If any shrubs are desirable to increase by cuttings, now is the time to attend to it. They are taken off now, planted in the open ground protected as much as possible from severe frost, by covering of earth, or any non-fermenting material.

The planting of trees will still continue to engage our attention at every favorable opportunity. Many prefer at this season to remove trees in the winter by the "frozen ball" system. There is nothing gained by this practice. To those unacquainted with this mode of planting, we may as well describe it. Just before frost is expected, a trench is dug around a tree a few feet from its base, leaving the tree so, that with a rope at the top, it can be easily drawn over. A hole is then dug for it in the situation desired. When the "ball" has become frozen through around the tree, it is removed to the prepared hole ; and, when a thaw comes, the soil is filled in around it. We have said there is nothing gained by it, and there are many disadvantages. If the tree has been removed a "time or two" before, as most nursery trees have, it will have an abundance of fibres near the stem, and can be successfully removed without much regard to the "ball of earth," either in fall or spring. If it has never been removed before, that is a tree growing naturally, it will have no fibres at its base, and so no "ball of earth" can preserve them ; so that a tree which can be moved successfully on this freezing system, can be as successfully done without it. The disadvantages of it are, that it exposes the injured roots for a long time to the injurious action of the frost and the elements, besides the frequency of the operation being improperly done, by several attempts being made at its completion. We have given the system a fair trial, and have done with it. The main object should be to preserve all the roots possible with the tree, keep them moist and preserve from injury, then go-a-head and don't wait for frost.

FRUIT GARDEN.

One of our first articles in the *Gardener's Monthly*, was one to warn our people against prevailing systems of fruit culture, which cut away the surface roots. Our advice was from life-long experience. But we excepted the dwarf Pear. We had had no experience with it at that time, except on the popular plans. Some of our friends have since gone farther than we did. They maintain that not even the dwarf Pear is to be excepted. We have weighed the subject well, and are converted. We acknowledge our error. We now know that it is just as essential that the dwarf Pear should have its roots on the surface as any other tree. We are convinced that much of dwarf Pear failures come from the long stems buried under ground, and the kind of digging culture which cuts away the surface roots. In many cases of diseased Pears, we have recently seen dug up in various parts of the United States, the lowest roots, ten or twelve inches from the surface are rotten. The decay of course spreads upwards. That intelligent Western cultivator, Robert Douglas, of Waukegan, Ills., assures us that Quinces cannot be grown successfully in those parts any more except in grass ; not probably that there is any merit in grass, but because by this system the roots keep near the surface. In planting dwarf Pears, if the plants have long quince stocks, cut them back to *six inches* from the bud, and plant as nearly *on the surface as possible.* There is nothing more satisfactory than a dwarf Pear orchard managed properly, and at the same time nothing more annoying than the dwarf Pear as grown by those who do not or will not grow them as they should be. Most people treat the dwarf Pear just as they would a crop of corn, but the proper course is about as opposite as can well be imagined. Dwarf Pears should be set closer than they are usually, say ten feet apart. They can then occupy the ground exclusively without any "begrudgement."

Pears, apples, and cherries generally do well fall planted. Stove fruits north of the Potomac are best in spring.

Pruning is generally thought very necessary, and to be a great art, which it is,—but the greatness of the art consists in knowing how little to cut away. Usually all that is necessary is to cut with a view to the future shape of the tree.

Where the grape and raspberry do not ripen their wood thoroughly, they are liable to winter kill. In these cases they must be laid down, and protected with earth. Previously the immature wood should be cut away. Plum or cherry trees which have been so neglected as to be covered with knots, may be renovated. Cut away at this season, all the parts affected, then in May next, watch for the first appearance of the swellings and rub them out with finger and thumb as they appear. It is astonishing how easy this wickedness of the plum and cherry can be made to cease from troubling, and how with fruit one shall be blest.

Apples, quinces and plums should be examined before frost sets in, and if any borers have effected a lodgment—a jack-knife and a strong piece of wire are all the implements necessary ; a man will go over several hundred trees a day. It is a cheap way of preserving trees. If many of the remedies proposed by correspondents in our paper have been tried and found effectual, such as tobacco stems, &c., there will be few borers to deal with in the examination.

In cultivating Raspberries on a large scale, they do best in hills, as the cultivator keeps them from crowding each other so much. For garden culture they are better in rows, the suckers to be kept hoed out occasionally as they grow ; enough only being left that will be required for fruiting next year. Where canes are required for new plantations, of course a portion of the crop must be sacrificed to the suckers.

Strawberries are much better when protected through the winter, no matter how "hardy" they may be. Very coarse strawy manure is the best material, which can be raked off in early spring. A few inches is sufficient, just enough to keep the sun off when frozen, which all our readers know by this time is the chief cause of the loss by frost.

COLD GRAPERIES, &c.

In houses where no fire is kept, the leaves will all have fallen, and the vines be ready for pruning. The course depends on the system adopted. That system is the best which leaves the longest canes,—very severe pruning to keep the plant within bounds soon injures the general health. We pointed out years ago, the great benefit of training a single vine horizontally along the lower part of the house, and training canes from this up along the rafters. This is one of the secrets of success in the celebrated Hampton Court vine. The English papers have recently been discussing this question, and the facts in every instance favor the longest cane system. After the vine has become extensively developed, it can be managed very well on the spur system of training, which cuts away the young bearing branches of the vine back to a single eye at the base near the old cane from whence it sprang. After the vines are pruned, we like to strip off all the old bark, and wash with lime and sulphur, which destroys any eggs of insects which generally abound. The following is English advice for fruit houses at this season :

"Late Vineries, in which fruit is still hanging, should not exceed a temperature of 47° or 48° at night, if the grapes are to be kept as long as possible, plump and good. Maintain a low temperature, in all vineries where forcing has commenced, until the buds have fairly started. From 50° to 54° will be ample ; the former upon cold nights will suffice, as it will obviate too great a rush of artificial heat. Keep up a nice gentle temperature, upon the surface of the outer border in cases where the roots are out in such positions by means of fermenting materials. Syringe the vines occasionally only, if a goodly volume of humidity is constantly maintained by means of fermenting material placed inside the house. If no such advantageous circumstances exist, it will be necessary to damp the canes more frequently, and by other means to induce a good moist atmosphere. Old vines, when thus forced early, receive some assistance by means of moistened hay-bands which are generally bound around the lower portion of the rods neatly. Houses in which the roots of the vines are inside, and the borders of which are likely to be very dry, should have thoroughly good soakings of water, which should be comparatively warm. It will be well, therefore, to prepare a heap of thoroughly decomposed manure of the very best quality, which, by occasionally turning over, will be ready to place thickly upon the surface of this inside border previous to giving it another good soaking with water. The useful properties it possesses will thus be worked out and driven down into the soil below.

Give studied attention to all Peach and Nectarine borders, the trees in which are being forced. See that they do not stand in need of water. If any buds fall off, accept that circumstance as a proof that something is likely to be wrong in that direction. Of course the treatment must be according to past routine. If the lights have been removed and rain fell upon the border, it is not nearly so likely to want a good soaking as others from which the lights have not been removed. See well to all plants intended to be forced successfully for a supply of flowers. All freshly potted plants should receive valuable assistance from being plunged in some sort of fermenting material in the outer air. This will induce fresh rootlets to form, and prepare them for a better display when wanted."

GREENHOUSE.

It is a common error to apply to much fire to greenhouse plants at once on housing them. For a month or so, the temperature should be as low as consistent with safety, applying artificial heat only when there is immediate danger from frost. All the air possible should also be afforded them--avoiding always cold draughts. The hardier and the riper the wood can be secured now, the less fire they will require when the weather becomes colder. The most excitable plants should be placed as near to the direct rays of the sun as possible, excepting, of course, such as prefer shade—such as Camellias, Azaleas, Rhododendrons. Reflected light is not near as advantageous to light loving plants, as the direct sun's rays, and those of the morning sun are most useful of all. Plants which are not growing much do nearly as well in the shady part of the greenhouse. Plants that it is desirable should form large handsome specimens must be repotted as fast as the roots appear freely around the ball of soil in the pot; if they once become impoverished, the oldest leaves ripen and fall off, which is a loss to the plant. In growing fine specimens, it should be a point to maintain every leaf in perfect health to the latest possible moment; much of success depends on this. Camellias should have their buds thinned if too many have evidently set—two or three good buds to each shoot is enough in the most vigorous instances, and where the shoot is weak, one is enough to be permitted to flower. Regularity in temperature and treatment is essential to successful Camellia growing. To be hot or cold, wet or dry, by turns, almost daily, is a fatal course of practice. Flowering annuals, that have been grown for winter decorations, are much improved by having their tops pinched off about this time. The individual flowers are reduced in size, somewhat by this practice, but they are produced in such great abunbance, and the plant so much improved in appearance that it is an easy choice between the two practices.

It is curious to note how common names often become popular, no one knowing how they rise. Thus in almost all American cities the Cape Pelargonium is known as the "Lady Washington Geranium." At one time considerable skill was displayed by gardeners in growing fine specimens of them, and they are realy worth all the time they take.

In Europe there are treatises expressly written about them. A writer says, in November, they will now need very careful attention. A very slight amount of warmth more than is good for them, too close an atmosphere, or the like, productive of a weak, ill-maturea growth, cannot be too much guarded against; for after they have become drawn at this season, owing to any little discrepancy in their general treatment, it is not easy to restore them to vigor. Afford each plant abundance of room, keep them as near the glass as possible, and give all the air possible upon all favorable occasions. Plants intended for very early flowering may now be got into their preliminary shape, with the aid of a few stakes, &c. pinching back all that need it, and giving them a slight shift when fairly started afterwards into growth, provided at all times the roots are in want of more extended space. I have already suggested that they be potted into a nice, free, open, rich, friable maiden loam—that upon which the upper herbage has become thoroughly decomposed, by laying for a twelvemonth or so—giving rather less silver sand at each successive potting than is needed when first started after having been cut back. I would advise that the earlier batch—those which are fairly growing—receive now and then upon nice, fine sunny days, a slight sprinkling overhead with water some half a-dozen degrees warmer than the temperature of the atmosphere. This invigorates them much, without inducing any unnecessary growth, when afforded them with due regard to existing circumstances. Always endeavor to get the foliage thoroughly dried before closing the house, therefore use tepid water, which evaporates more readily than cold water.

COMMUNICATIONS.

THE METEOROLOGICAL INFLUENCES AFFECTING THE GRAPE.

BY DR. J. STAYMAN, LEAVENWORTH KANSAS.

Nature is a continued change, like the ebb and flow of the ocean. We have day and night, heat and cold, summer and winter, composition and decomposition. So in vegetation, we behold the records of innumerable changes of seasons and variations of temperature. Each season's growth, like a link in a chain, is a complete cycle, which unfolds the seasons and growth of ages. Nature is a book which developes the past, teaches the present and determines the future. She gives the zone and climate best adapted to every plant. She gives the conditions *there* most favorable to their growth. She also determines the extremes of altitude, latitude and longitude; of light, heat and moisture. Her species and varieties are innumerable, yet in no case are the conditions of growth and health reversed. Her conditions are specific, yet they are varied for the development of each part. There is a stage of germination, growth, maturation and rest; also corresponding degrees of temperature and moisture. Heat and light, air and moisture, are essential for the growth and perfection of vegetation. Seeds will germinate with heat and moisture, but plants will not grow without light and air. They absorb heat and light in relation to their

color, they decompose carbonic-acid in proportion to their growth; and require moisture in proportion to their growth and evaporation. In the rudimentary state they endure more moisture than heat, and in the maturing state more heat than moisture.

Plants have distinct stages of growth, characterized by different conditions, what is essential for the one is not for the other.

They have also distinct offices to perform, corresponding with their stages of growth; the one is the expanding, developing or growing, and the other the condensing, solidifying or maturing.

The first is characterized by an excess of moisture, the second by an excess of heat.

With these preliminary remarks on the growth of vegetation, we shall endeavor to apply these principles to the growth and perfection of the grape. It is not our object to show the zone or climate of the grape, but the conditions of its *healthy growth*, for, if these cannot be obtained, it is but little difference where it grows. The grape vine being a very rapid grower, producing such large ratio of wood, foliage and fruit in proportion to the density of its stock, shows an extraordinary vital action, which must have a corresponding reaction. As excessive growth is antagonistic to the production of fruit, so excessive vital action is antagonistic to the *maturity of wood and fruit*. Therefore, if excessive vital action is continued too long, there must be a corresponding time to condense, solidify, and concentrate the essential elements to the different parts to mature, and perfect the fruit and wood, otherwise it will be unable to perform its functions and become diseased. The essential conditions of growing, ripening and maturing of wood and fruit, is a definite amount of light, heat and moisture. Where these cannot be obtained, it is useless to attempt to grow the grape.

If there is a less average than 55 degrees of temperature for the growing months of April, May and June, and a less average than 65 degrees for the maturing months of July, August and September, and an average of fifty per cent. of clear sky, there can be no hope of success; but when the temperature averages 60 degrees for the former months, and 70 degrees for the latter, and an equal proportion of clear sky, and no change of temperature of more than 50 degrees in 24 hours, other conditions equal, success will be certain. And where the temperature averages 65 degrees for the first months, and 75 degrees for the latter, other conditions being equal, fruit of the greatest excellence can be raised, and wine of the greatest body and finest quality can be produced.

The conditions of heat and moisture are very different—the former is beneficial in proportion to the high temperature for the months of July, August, and September; while the latter is in proportion to its diminished quantity for the same months.

The former we have no control over, and have to seek it where it exists;—the latter we have some control of, and should seek to get rid of it. When there is an average rain fall of 6 inches for the months of April, May and June, and an average of 5 inches for the months of July, August and September, other conditions favorable, we cannot succeed in raising grapes, unless controlled by artificial means. When the average rain fall for the first three months is not more than 5 inches, other conditions favorable, some of the most hardy sorts can be raised. When the average rain fall for the first months is not more than 4 inches, and the average for the latter is not more than 3 inches, other conditions favorable, all the hardy varieties can be cultivated with success. But where there is a less average rain fall than 3 inches for April, May and June, and a less average than 2 inches for July, August and September, all other conditions being favorable, fruit of the best quality can be raised, and wine of the greatest body and excellence can be made.

From the foregoing facts we come to the following conclusion: that the most favorable conditions for the cultivation of the grape is an average temperature of 70 degrees for the whole term of six months, and not less than 75 degrees for July, August and September, being 12,600 degrees for the growing and maturing seasons; and a less average rain fall than 2.50 inches for the whole season, and a clear sky and dry atmosphere for the latter three months, and where there is a less change of temperature than 50 degrees in 24 hours any time of the year.

Having finally arrived at some definite conclusions respecting the meteorological influences affecting the grape, we shall endeavor to demonstrate the same by facts. In doing so we hope to have your patient indulgence, for we are prone to condemn without examination. We have no theories or opinions to give, but what we believe are founded upon facts, and it has been by close observation and most diligent investigation we have arrived at the above conclusions.

It appears strange that so many writers have been engaged in discussing this subject, and nearly all agreeing that temperature and moisture have something to do with it; yet none have been able to point out any *definite condition*, leaving the whole subject in doubt, obscurity and perplexity.

We have not space in this article to fully discuss the subject, therefore, we will give but a summary of the facts. In doing so we acknowledge our indebtedness to the Smithsonian Institute and Department of Agriculture, Washington City, for valuable meteorological reports. We shall give, in the first place, the meteorological conditions, *when* the grape succeeded the best at a number of different points, to show the uniformity of certain conditions *favorable* to its cultivation. Secondly, we shall give the meteorological conditions when the grape did not succeed at a number of the same points, showing the uniformity of different conditions *unfavorable* to its cultivation :

	Average of April, May and June		Average of July, Aug. & Sept.		Average of the Six Months.	
	°	in.	°	in.	°	in.
Years of success						
1863 Kelley's Island, O,	56 3	2.40	68.6	1.48	62.4	1.91
1867 " "	57 3	3.18	71.9	1.54	64.6	2.36
1860 Leavenworth, Kansas,	63 1	.15	75 6	.23	69.3	.19
1867 " "	60 6	4 81	73.6	2 88	67.1	3,84
1867 Cincinnati. O,	63 4	3.40	78 4	1.28	70 9	2 31
1867 St. Louis, Mo ,	65.0	3.31	76 6	1.41	70.8	2.36
Years of Failure.						
1866 Kelley's Island, O,	58.3	4.10	69 8	4 00	64 0	4.05
1865 Cincinnatti, O,	60.5	4 74	76 3	5.32	68 4	5.03
1866 " "	64 7	2 89	70.7	6 70	67 7	4 90
1865 Leavenworth, Kansas,	63.8	5 37	74 7	7 09	69.2	6 23
1863 " "	62 2	6 07	70 0	5.85	66 1	5.95
1867 Harrisburg, Pa ,	61.8	3.79	72.0	6.39	66 9	5.09

In the above table we give the average temperature and rain fall of six places of success, and an equal number of places of failure for the growing months of April, May and June, and for the maturing months of July, August and September, and also the total average of the season.

From these tables of seasons of success and failure, it is very evident that there is a great difference in the amount of rain for the months of July, August and September. In no case of success does the average rain fall amount to 3 inches for the above months, while in the seasons of failure there is no instance of less than 4 inches for the same months.

Now, if we take the average of the seasons of success and failure we find the following results :

	°	in.	°	in.	°	in.
Average of 6 seasons of success,	60.9	2.81	74.2	1.43	67.5	2.12
Average of 6 seasons of failure,	62.2	4.61	72.2	5.89	67.2	5.25

From the above table we find the average temperature of the seasons of success for the months of July, August and September to be 74.2 degrees, and the average rain fall 1.43 inches for the same period, while we find for the seasons of failure the average temperature for the same months to be 72.2 degrees, being a difference of two degrees, or 180 degrees for three months, and the average rain fall 5.89 inches, being a difference of 4.46 inches, or 13.38 inches more for July, August and September.

That the success or failure depends upon the temperature and rain fall of the above months is evident from an examination of the tables.

It will be seen that at Leavenworth, 1867, the average temperature for April, May and June was 60.6 degrees, and the average rain fall was 4.81 inches, while at Harrisburg, Pa., the average temperature was 61.8 degrees, and the average rain fall 3.79 inches, yet at the former place the grape succeeded, at the latter place it failed.

Now, if we compare the months of July, Aug. and September at Leavenworth, we find the average temperature to be 73.6 degrees, and the average rain fall 2.88 inches, while at Harrisburg the average temperature was 72 degrees, and the average rain fall 6.39 inches, being a difference of 10.53 inches, and 144 degrees of temperature for the whole of the above period.

The season of 1867 was remarkable for extremes, and shows most conclusively the truth of our position : east of the Alleghenies the grape was almost an entire failure ; never was mildew or rot more prevalent ; only the most hardy escaped. While west it was an unusual successful season ; grapes have never ripened so well, been so perfect, and contained so much sugar : even the Catawba and Isabella have done well.

To show the meteorological influences operating to produce this difference, we will give an average of the temperature and rain fall for 1867. of the states wherein the grape has been most successfully cultivated.

Cultivated.	Av. Ap. May. Jne. °	in.	Av. Jly. Aug. Sep. °	in.	Av. of 6 months. °	in.
New York,	54 2	4 80	67.3	3.31	60.7	4 05
New Jersey,	59.4	6.11	70 2	5.53	64.8	5.82
Pennsylvania,	58.1	5.30	70 0	4 83	64.0	5.06
Ohio,	59.5	3.59	71.9	1.77	65.7	2 68
Illinois,	59.2	3.69	73 1	2.07	66.1	2 88
Missouri,	62 5	3.99	73.8	2.87	68.1	2 43
Kansas,	61.2	5.19	75.3	2 94	68.2	4 06

By taking an average of New Jersey and Pa., we find 15.54 inches rain for the months of July, August and September, while if we take the average of the states of Ohio, Illinois, Missouri, and Kansas, for the same months we have 8.31

inches less rain and 165 degrees more heat. And if we compare with New York we find 2.70 inches less rain, and 558 degrees more heat for the same period in favor of the west. But if we compare the average of Ohio, Illinois, Missouri, and Kansas, with the average of New York, New Jersey, and Pennsylvania, for 1867, we find the following results :

	°	in.	°	in.	°	in.
Average of O., Ill. Mo, & Kan.,	60.6	4 08	73 5	2.40	67.0	3.24
Average of N.Y., N.J., and Pa.,	57 1	5.41	68.9	4.55	63,0	4.97

Here we see a difference of 414 degrees more heat, and 6.45 inches less rain for the months of July, August and September, and for the whole period 720 degrees more heat, and 10.38 inches less rain in favor of the Western States.

Now, if we compare the successful periods of grape culture with the success of 1867, as below seen, we find a perfect agreement in the conditions of success.

	°	in.	°	in.	°	in.
Average of successful periods,	60.9	2.81	74 2	1 43	67 5	2.12
Average of 1867,	60.6	4.08	73 5	2.40	67.0	3 24

For the months of July, August and September there is but seven-tenths of a degree of difference, and for the months of April, May and June but three-tenths, and for the whole period but five-tenths. Although we find considerable difference in the fall of rain for the months of April, May and June, yet it is not above the conditions of success, while for the months of July, August and September, it is below the conditions of success.

Some may, however, think that the failure of the grape crop east of the Alleghenies was entirely due to the low temperature of the season. That heat is absolutely necessary we admit, and a high temperature is requisite to concentrate the sugar for making wine of great body, yet we will show that the temperature there was sufficient to mature grapes of good quality, provided the conditions of moisture had been favorable. We herein annex a table of the average temperature of New York, New Jersey and Pennsylvania for 1867, with the temperature of Kelly's Island for 1863, a successful season, and also Toulouse and Dijon, France, where the grape is known to succeed :

	Ap. My. June. °	Jly. Ag. Sep. °	Six Months. °
New York. New Jersey, & Pa., 1867	57.1	68 9	63.0
Kelly's Island, 1863,	56 3	68.6	62 4
Dijon, France,	59 2	68.3	63.7
Toulouse, do.,	60.1	68.8	64 4

Here we have such an agreement in temperature that no person could believe a failure to originate from that cause, and if anywhere it should have been at Kelly's Island, for there the temperature was the lowest ; but that was not the case, for the rain fall that season was but 1.48 inches of an average for July, August and September, and for the months of April, May and June, an average of but 2.40 inches, which was 2.16 inches less than the average of the years of success.

Although the grape may succeed at the above temperature, it is not sufficiently high to produce wine of great body, unless under the most favorable circumstances, such as clear sky and very little rain during the maturing of the grape.

Having finally determined by observations made, the lowest temperature, and the greatest amount of rain the grape will endure to ripen well, we shall now endeavor to show that the quality and perfection of the grape, and the body and excellence of the wine, is in proportion to the *high temperature and diminished rain fall of the season.*

In doing so, we shall only give the places where wine of the greatest strength and best quality is made.

We have no report of Hammondsport, New York, a celebrated wine locality, but in the absence of such we shall let Kelly's Island represent it :

	Av. Ap. May. June. °	in.	Av. Jly. Aug. Sept. °	in.	Av. of the Six Months. °	in.
Kelley's Island, O. 1867,	57 3	3.18	72.0	1.54	64.6	2.36
Cincinnati. O, 1867,	62.3	3.95	76.7	0.98	69.5	2 44
St. Louis, Mo., 1867,	63 7	3.91	75 1	1 65	69.4	2.81
Los Angeles Cal.,	65 0		75.0		70.0	
Cadiz, Spain,	63 8		71.0		67.4	
Madeira, France,	65.1		71.2		68.1	
Marseilles, France,	63 4		72 1		67.7	
Naples, Italy,	64.1		73.9		69.0	

In this table of the temperature and rain fall for Ohio, we find 3.05 degrees more heat and 7.56 inches less rain for July, August and Sept., than the average of Ohio for ten years. For Missouri the temperature is a little higher, but we find 6.60 inches less rain for July, August and September than its average for ten years.

This high temperature and very little rain fall in the maturing season has been favorable for the grape, as the reports will show. Mr. F. R. Elliott, of Cleveland, Ohio, who is of the highest authority, says in the December number of the *Horticulturist*, " During my whole acquaintance with grape growing, I know of no record of a season when the grape crop has been so full throughout the entire North and West as it has been this year of 1867." A writer in *Coleman's Rural World*, November 15, says : " The season has been of the most favorable character for developing the excellence of the grape, and the vintage of 1867 will be of a marked character; our fervid sun and cloudless sky, and protracted drought, which has so seriously reduced the products of our fields and gardens, has developed the elements of the grape in its greatest perfection, and it has prevented the *necessity* of gallizing." The editor of the *Gardener's Monthly*, Mr. T. Meehan, says the same in regard to the superior qualilty of the grape in the West, in November number of the *Monthly*.

The above we think sufficient to show that the season of 1867 has been a very favorable one in the West for the grape, corresponding with the high temperature and little rain fall of the above tables. We place here a table of the strength of the must by Oeschles' must scale, of a few varieties.

	Hammond-port, N.Y.	Cleveland, Ohio.	Herman, Mo.
Concord,	73	81	82
Ives' Seedling,	77½	83	
Isabella,	66¼	84	
Clinton,	92	93½	103
Norton's, Virginia,	89	105	115
Delaware,	95	104½	105
Catawba,	81	94	90
Iona,	92		
Cynthiana,			118

From the above reports we see that the grape has been remarkably rich, and wine of great body has been made, agreeing with the conditions of temperature and moisture.

We placed to the tables of temperature Los Angeles Cal., where they have no rain during the whole season, yet we have never heard of a failure. We also placed Cadiz, Madeira, Marseilles and Naples, the best locations in Europe, where wine of the greatest body and strength is made and of the finest quality. We have no monthly reports, but they have less than 15 inches of rain during the whole growing and maturing seasons, which is ten inches less than our average. In the dry seasons of 1834, 1842, and 1846 in France, they made wine of the very best quality.

From the above reports, we believe we have fully sustained our position, namely, that the quality of the grape and wine is in proportion to the high temperature of the season, particularly July, August and September, and the diminished rain fall.

Having shown that wherever excessive moisture exists, that the cultivation of the grape is uncertain, and wherever extreme dryness exists it is successful in regions of favorable temperature.

We shall now give what we believe to be the principal remedies to overcome this excessive saturation of the soil.

If our conclusions are correct, *surface draining* is undoubtedly the most important, for, if the soil does not receive more than a proper amount of rain, there is no necessity of *under-draining*, unless the soil is naturally wet or receives it from adjoining lands. The next most important is location ; in fact it is but a different expression for the same thing, for we can more effectually *surface-drain* by selecting a location than by any other means. The sides of steep hills, gentle slopes, even the summit of high hills, are the best, and stony land mixed with shale or pebbles, with clay sub-soil of sufficient richness, would be the most desirable. So important is surface draining, that we might sum up the whole success of grape culture to depend upon it in a wet season.

We have closely watched the effects of planting on level ground, even well drained, and find it is useless to attempt to compete with those on high hills and steep slopes, and we have removed our vineyards accordingly a few years ago with most excellent promise.

We would refer you to an excellent article in in November number of the *Gardener's Monthly* upon this subject, by the Editor, which contains more good sense than a volume of grape articles.

[We think our readers will bear us out in the fact, that we have ever been anxious to do full justice to all our contemporaries. Indeed, we think that one of the meanest things one paper can be guilty of, is to copy an article from another paper, and then give it as original, without any notice whatever of the magazine in which it first appeared. We believe we have seen this article in another journal, and consider it particularly fortunate that we did so, as it enables us to protect ourselves from what might seem a plagiarism. In justice to ourselves, therefore, we have to say that this excellent article is set up from manuscript furnished us by the author himself.—*Ed.*

IMPROVEMENTS IN JAPAN LILIES.

BY M. P. WILDER, ESQ.. DORCHESTER, MASS.

My Japan Lily Seedlings have developed progress by changes from year to year, and have been the admiration of all who have seen them. Thirty years of crossing has disturbed the fountains of generation, and produced many variations that will end in something new, if not grand, in the future. You know I had a double Japan last year. This year I have all shades, and between red and white, from the softest blending to the darkest spots of crimson. The first of my crossing was about the year 1857, when I received a bulb from Europe, which cost 5 guineas. Not having any lily to cross it with, I gathered from a garden on the roadside, pollen of the L. tigrinum, and after carrying it for three weeks in my pocket, I fertilized the Japan lily, and from these came my first seedlings. Some have thought that this might be a mistake, or that I was mistaken: that "Species would not cross." To prove the truth of my assertion, I have this summer again crossed the Japan, both red and white, with pollen of L. tigrinum, and I have now numerous large pods of seed on the plants. I believe with Mr. Darwin that some plants have self-impotent pollen. Lilium auratun belongs to this class. It is very difficult to seed with its own pollen, neither will it take L. tigrinum like the L. lancifolium, but it can easily be crossed with the latter. Where is the line of demarcation to hybridization, and the variation of plants under domestication? When we pass the bounds prescribed by botanists of the past, and find that not only species but genera can be crossed, we shall discover a field whose boundaries, in the words of Dr. Lindley, are lost in the horizon and will still be receding as we advance. The production of new Camellias, Azaleas and Rhododendrons by crossing have been multifarious within my own knowledge of the former. I have produced by petaloid or *transformed* pollen double flowers almost at will, and from sports of the mother plants (as Mr. Darwin would probably say, under *domestication*) I have produced many other superb varieties, which have been perpetuated by grafting. By the same processes, change and variation seems to be, in the plant world, the order of the day. But if I write in this strain you will set me down as a convert to Darwin, which I confess would be no small distinction. But what say you to the crossing of generaas it is now understood. We have crossed Lilium lancifolium rubrum withGloriosa superba, and have the seeds now in growth. What a horrible innovation upon the established laws of botany! So thought I, and hardly dared to mention it to the leading botanist of our country; but to my surprise he said he was not at all astonished. We are living in an age of change and improvement, and this is equally true in regard to the progress of rural art.

[Mr. Wilder's communication will be read with much interest. Every one who has visited his grounds will long remember the many beautiful forms of the Lily that were raised between the Tiger and Japan Lilies. We happen to know that Professor Gray, who has recently left for Europe, was anxious to have an account of Mr. Wilder's experiments to take to Dr. Darwin, but time did not permit their being made out then, and it is with much pleasure that we find Mr. W. now has had the leisure to pen them for us.

The subject of natural cross impregnation, started by Dr. Darwin, is yet but in its infancy. Every one who has any observing faculties, can see almost daily the truth of Mr. Darwin's views, and might add innumerable facts of interest to the comparatively few as yet known. We have ourselves, with the very limited time at our command, made many curious notes of this character the past season. The common Balsam of the woods, (*Impatiens pallida and fulva*,) and in fact the common Baslam or Lady Slipper of our gardens, has its stamens so arranged that it cannot fertilize itself. The pistil swells notwithstanding its non-impregnation, until it forces the conjoined mass of stamens to fall off, when it receives the pollen of some foreign flower.

Again, *Forsythia viridissima*, the common Golden Bell of gardens, has, we believe, never been known to produce a seed vessel. We have never seen or heard of one. Suspecting that it was simply pining for its "affinity," we last spring impregnated a few flowers with pollen from *L Suspensa*, and have now four pods on F. viridissima, which are not yet ripe. Another case is similar to Mr. Wilder's *Gloriosa* experiments. We crossed a flower of the Australian *Disemma coccinnea* with pollen of the *Passiflora cœrulea*, carefully cutting away the unopened anthers of the *Disemma* of course. The pod perfected its seeds. Anxious that no accident should mar so curious an experiment, we divided the seeds with Professor Gray, Mr. Buist and ourselves, as we now write we have half-a-dozen plants just pushing their second leaves beyond the seed lobes. The final result is anxiously looked for; but enough is being developed to show that instead of the old doctrine, that "like produces like," being the law, nature takes peculiar pains to prevent like producing like, by making special efforts to prevent selt-ipmregnation.]

TOMATO TRELLISES.

BY S. L. ALLEN, CINNAMINSON, N. J.

In the matter of trellises for tomatoes I have *no experience*, but my judgment would be against them as useless, especially since knowledge of the growth of the vine leads to a reverse conclusion, from consideration of the only argument brought up in their favor, viz., that of the fruit receiving more light. The fact is, that the weight of the fruit will always break down the vines, and it thus becomes very fully exposed to the sun, the great flavorer. By training this is prevented, shade from the leaves being more regular and complete. I have seen thousands of acres growing for market, but never any trellissed or supported. I believe the best plan for garden or amateur cultivation would be that of plentiful mulching with some coarse material.

[The argument in favor of the Tomato on board fences and trellisses was only indirectly dependent on the point of more light. The direct argument was that the Tomato was infinitely *better in quality*, and had *more preservative powers*, and this was only *supposed to be* the effect of *more light*. So that though shown to be wrong on the *light* argument, the excellence of the fruit yet remains.]

NATURAL INARCHINGS.

BY W. G. A.

During last summer, I discovered a very interesting case of inosculation on a Linden tree, (Tilia Americana,) in Independence square, Philadelphia. At 18 or 20 feet from the ground the principal stem divides into four large branches at quite acute angles. About six feet higher, two of the branches approach and form a connection like the Siamese twins, and then again diverge, and continue to the extremity of the head of the tree.

In some respects this tree is more remarkable than the celebrated Beech belonging to the Marquis of Exeter, at West Hay, of which Loudon gives two pictures. The latter appears to consist of two trees, probably from the same root, and so crowded together as to resemble a single tree. The Beech on account of its smooth bark, is said to be liable to the phenomena when crowded, as the branches are apt to cross and interlace, and in the instance quoted, the connection is near the ground, where there would not be much movement of the branches. The bark of the Linden, on the contrary, is rough and thick, and the nearest approach of the branches of our tree is at the point of connection, six or eight inches apart, when they again widely diverge. It is difficult to conceive how the branches could unite after having attained the height of over 25 feet, as a separation would seem inevitable on the slightest motion of the air. The connecting portion extends full 18 inches along the branches.

This tree is just inside the western gate, opposite Sansom street, and was doubtless planted by Mr. Samuel Vaughan, in 1785, as its *pendant*, apparently of equal age, still flourishes at the Fifth street end of the same walk.

DWARF PEACH TREES.

BY MR. P. J. BERCKMANS.

Orchard house culturists complained some years since, that the health of the Peach trees trained for pot culture, was impaired after a fair season of fruiting, by the cramped space the roots had to occupy. This remark led me to the idea of taking the seedlings of the Italian Dwarf peach as stocks whereupon to work the early market varieties upon, and to endeavor to produce really Dwarf Peach trees of any given variety, without the necessity of root pruning, etc.

I consequently budded several seedlings of the Italian Dwarf with Hale's, Troth's, Amelia, China Cling, etc. Last year the buds started off finely, and I was anticipating for the ensuing fall some well formed Dwarf Peach trees, but contrary to my expectations, the buds kept growing until by fall they averaged seven feet high, with bodies two and a half inches in diameter at the junction of bud and stock, while the latter attained the same heavy growth. The remaining seedlings in the same row being left unbudded averaged one inch in diameter at the ground.

This unexpected result proved that in the case of the Peach the graft influences the stock solely, and the latter has little if any influence upon the former; this being made evident by the stock of

the ordinary peach assimilating itself entirely to the peculiar growth of the Italian Dwarf when budded with that variety.

My next experiment was to take trees of the Italian Dwarf budded upon ordinary peach stocks, and by double working them succeeded in producing Dwarfed trees of any given variety.

This may prove of some benefit to Orchard-house culture, as peach trees thus treated do not extend their roots as far as those of the ordinary kind, and can in a manner be compared as occupying the same position to ordinary peach, or I may say standard peach trees, as the Dwarf apple does to the standard.

The Italian Dwarf Peach seems to be a variety *Sui generis*, as it reproduces itself identically in every instance. Albeit, all my efforts to hybridise it with other varieties; I have never succeeded in producing a new variety, and as this type is so well adapted to pot culture, it is to be hoped that others will be more successful.

Two years since I found an accidental seedling in a nursery row, which is entirely distinct in growth, foliage and general appearance from either Italian or Van Buren's Dwarfs; and although the tree is now three years old, but has not as yet produced any fruit, all its characteristics denote that it will produce a yellow fleshed peach, and it is to be hoped that it will be of good quality.

THE EARLY ROSE POTATO AND NEW WARES.

BY CHRONICLER, PHILADELPHIA.

The Early Rose far surpasses in virtues all the commendations sent out with it, being a week earlier than the Early Goodrich, yields as heavy crops, and thrice better in table quality. It has succeeded equally well upon various soils and localities the past season. It is more easily propagated by *cuttings off its shoots*, than are Dahlias and Tomatoes. We tried four cuttings, they soon struck root and grew quickly, the four plants yielded a half-peck of tubers; but were later than those planted by sets. We have not seen any with such rank shoots as G. W. Best, of Utica, speaks of, perhaps our climate may check the rank growth of the shoots; we caused the ends of all shoots to be nipped off as soon as they formed blossom buds, and many of the plants from sets of one eye each produced a half-peck of good sized tubers.

The edible quality of the Early Rose is equal to the following late varieties:—The once famous *Don*, of Great Britain, the *Cups* of Ireland, the *Pinkeyes* of New York State, the *Mercers* of Pennsylvania, and the modern *Garnet Chili* and *Monitor*.

The skin is rosy blush, slightly rough, the flesh pure white, the eyes are not numerous nor deeply sunk. These are all the external signs of a good potato.

Greece was long famous for her well finishsed gardens, and the sweetest finish of our pleasure grounds are called the "Grecian Style." William W. Wilcox, of Middletown, Connecticut, carries on the business of making fancy frames and trellisses of galvanized iron wire for supports of flowering plants of various sizes and habits, they are very ornamental and add elegance to fine gardens, they may be called "Grecian ware."

Italy for centuries was famed for the ingenious figures of her gardens, sculpture of stone and rustic works of wood.

James King, of New Haven, Connecticut, manufactures rustic work of wood extensively. Chairs and settees for seats, and hanging baskets, vases and large stands for growing flowering plants in. The figures are very ingeniously and curiously wrought with roots of trees, and beautifully polished with varnish. Their forms and sizes are various, and make gardens and pleasure grounds very attractive.

R. Warner, of Cleveland, Ohio, makes garden labels in thousands by machinery, of many different sizes and forms, suitable for every purpose of preserving the names of plants; they are well made, and are sold by retail in our seed stores.

Every year new inventions are discovered to aid horticulture; and every year superior new productions are produced to further enrich and increase the value of horticultural crops, and the advertising columns of the *Gardener's Monthly* are the best medium to give notice of them throughout our own nation and other nations and empires.

PURSH'S JOURNAL.

(*Continued.*)

Early this morning Mr. Fell, who had got an Idea of my pursuits introduced me to Mr. Jacob Hart an acquaintance of Dr. Barton, who expected to see a letter in my hands directed to him. Mr. Hart told me that he at his journey to Philada. had heard of my coming to that place, & offered me very kindly all assistance in his power, to forward the intend of my journey. I soon got into conversation with him about the petrefactions of shells & he proposed a walk along the river where he would show me plenty. Accordingly we took a walk about 10. o clock : The impressions of the shells are plentifully in a kind of loose Iron Ochre stone, it is the nature of slate & opens almost any way, you would wish, some of the shells are very well preserved, while others fall to pieces as soon as opened.—I layd by some of the best specimens as I intended to have an other walk along the shore, on purpose to collect some : On the rocks here I observed a species of Galium foliis quaternis liniari lauceolatis, floribus albis—which I for the present call Galium Mollugo, though I think I am wrong in the name : I never seen this plant before, excepting in dryed specimens in the collection of Dr. Barton. In going up the river we came to a bed of of coal, which points out close to the edge of the water.

Mr. Hart observed, that there was an open Coal pit at about 2 m. from there, & if I choosed we would go to it ; this was as welcome an offer to me as could be. We crossed Millcreek & turned off from the river.—In this walk I found Convolvulus spithamaeus—Asclepias quadrifolia & Gratiola officinalis, in full flower. In crossing Mill creek & coming up the hill by the saw mill, I observed on the slaty gneis a good many signs of copper, being in this nighborhood ; the bloom of vertigris showed itself in several specimens of stone & alltogether the stone seemed to be of the same kind as that near Mr. Hughes' Iron Works at Antietam in which place copper has been found. We at last arrived at the Coal mine, the sight of which, I admired more than I could have expected ; It lays in draught or hollow, where one of the faces of the stratum of coal has been opened, by a little stream of water running with great swiftness alongside of it, & down a deep hollow by a kind of cascade. The face of this hill or stratum of coal is about 26 feet, from the surface of the ground, to the level of the little run ; the coal beginns about 3 feet below the surface & its stratum goes below the level of the run ; so that it may be judged to be a bed of coal more than 30 feet thick, & probably more strata below this, as it is even in this solid thickness very often interspersed with a layer of coal slate, or more properly premature coal.—The blacksmiths of this place make use of it principally, & like it for their work very much & I expected if the mine was to be opened coal of a fare superior kind, than it is used now, might be found.—not only in this place & along the river as I stated before, the vein of coal has been observed here, but in almost every place in this nighborhood. A very mighty bed of it, seems to lay all through this bottom & along the ascend of the mountain, which in a future period will make this place very rich & convenient for fuel. In examining this place a particular impression on the slate, near the place where the water runs down a deep hollow, struck my eyes very much : it appeared but very slightly & seemed to be worn away a great part by time & water : these impressions were very little sunk in the slate & about 8 or 10 inches wide & from one to three feet long, marked throughout by very regular rows of deeper excavations in a diagonal direction. I observed 4 or 5 of these pieces of impressions close to one another laying in an irregular direction.

These impressions but me in mind of the large stone in your possession with the net form'd impression which we supposed to be a species of Cactus; but those here are not exactly the same figure but as regulare : I had a great wish to get a piece of this slate out but as I had no tools I determined to come out again, provided with tools & plaister of paris that in case I should not succeed in getting a piece of stone, to make a kind of a cast of it.—This day was exceedingly warm, in the afternoon we arrived back Wilkesbarri, having made a tolerable long excursion ; I observed nothing new in vegetation excepting the above mentioned plants in flower & some others most common everywhere.

18.—Having had a very restless night, & feeling very undisposed this morning I kept in the house all day, resting myself; I apprehend a large drink of very cool butter milk, which I took yesterday, when very warm has done me a good deal of injury ; colik made me to keep the bed in the afternoon, connected with a feverish heat, which alarms me very much.

19.—This morning I still feeld very sick, & without any apetite for eating ; I vomited frequently very heavy, & got so weak, that I expected nothing else, than to be laid up alltogether. But still I thought that exercise, if I could stand it, might do me more good, than to nurse myself, I got a hammer & chissel & some plaister to go out to the coal mine, to see if I could get some of that impression. Mr. Fell the landlord, dit go with me ; he is a man of some learning & observation, his company was so much more usefull to me. When we arrived there, I set to work but was not able to get a piece of a square inch entire out, it being so very brickle that it flew in small fragments ; I made a paste of the plaister, & cast a good large piece, main time that were a drying we look'd about the place for more curiosities ; after climbing down the deep hollow, below the rock where the above impressions are on, we found the bed of the brook full of fragments of slate, coal and other stone ; amongst these we soon observed numerous impressions of vegetables ; some piece of this slate consisting entirely out of a congregation of ferns others of grass & reeds : pieces, I collected a number of the best among which were four different species of fern, very distinct : Asplenium ebeneum, Polypodium vulgare, Pteris aquilina, Osmunda interrupta & a sort of nephrodium with some pieces of reed or grass ; there were large pieces with a kind of scitaminous, with very large leaves, longitudinally & very feinly nerved ; but they were to large for me to carry, this day : But the greatest pleasure I had, when by looking over these fragments of drowned vegetation, I found a piece, with the same impression as the one in possession of Dr. Barton, & which was supposed to be a Cactus; by looking about I found more pieces but all more or less defaced & worn. This impression, when seen with the Dr I allmost doubted to be natural, but now finding so many fragments of it among other vegetable impressions, makes it a proof to be true impressions of a vegetable ; the above mentioned impression on the horizontal rock above the hollow seeme to belong to it, & have only been defaced by the water running over them, which has worn off the nett like figures, & only has left the holes between the mashes of the nett; the cast with plaister being not yet dry, I left it standing, to come out in the evening again, to get it. I carried a whole handkerchief full of impressions, with me & returned to the town, almost exhausted to faint away I went to bed & in the cool of the evening ; I took an other walk to the coal pit, to see whether my cast of the impression got dry ; but I found it was not, neither could I get a piece off; & as I had found to my satisfaction that it was not only a worn piece of the Cactus impression, as I for convenience sake call it now, I went back, to town, not much disappointed. Mr Hart who keeps a country store on the mouth of Lawahannock River about 10 m. from Wilkesbarre, at a place call'd Pittstown, intended to go there to morrow, & I promised to come out there likewise, if my health would allow it, as it would be so much on my way towards the Beechwoods which I was determined to visit.

THE SCUPPERNONG—ITS PROPAGATION AND PRODUCTIVENESS.

BY MR. J. M. D. MILLER, IUKA, MISS.

This remarkable grape differs from all others now cultivated, in its mode of propagation, as well as in many other respects heretofore named. *It will not grow from cuttings* ; all others will. It has been tried a thousand times, in open air, under glass, with bottom heat and without ; in all seasons, in all soils and in all conceivable ways, still no one has yet, so far as the writer is informed, been successful in rooting a single cutting. It is, however, very easily layered, requiring less trouble than almost any other kind. It even takes root in some cases, by being covered with its leaves only, and some vines have been known to send down pendant roots several feet from the scaffolding to the surface of the earth.

Layering is usually done in June and July, but may be done in August, September or October, the latter ones, however, very seldom rooted sufficiently to transplant until next October or November. The process does not differ from the usual mode, except requiring much less care. I have seen thousands of layers, simply covered by a boy with a spade, on very rough and rather weedy ground ; a mode not to be recommended, however. The layers are removed in October and November, or Febuary, March and April, and carefully put out in deep tilled, rich soil in the nursery, for another year, or transplanted to the vineyard, where they are set out as other vines, except the distance, requiring more space, thirty feet square, being allowed to each vine, sometimes twice that amount.

For the first two years, a small stake seven or eight feet high is necessary to tie the vine to ; afterwards cedar or locusts posts, about 8½ feet long, from 4 to 6 inches in diameter, are inserted in the earth, small ends down, two feet deep in a square form, ten feet apart, with the vine in the centre, then the four posts are connected by spiking oak scantling on top or by sawing notches and laying rails in them; or strong wire might be used for neatness. The small shoots should of course be removed as fast as they appear, until the vine reaches the top of the scaffold, formed by putting cross pieces about a foot apart on the scantling or rails. The cross pieces, may be small rails, or better two inch square sawed timbers. This scaffold is usually covered the first year, when other similar ones must be erected. It is a matter of importance to procure cedar or locust, and prepare them for preservation in the ground, as long as possible, since the Scuppernong, will flourish for a hundred years, growing in all directions annually from the centre from five to ten feet, and should the scaffolding fall by the rotting off of the posts, the vines would be very troublesome to elevate.

Since the roots of this vine run nearer the surface than any other, it is desirable to mulch, with straw, grass, weeds, old tan bark, etc., the first two or three years, to keep them moist and the ground loose, frequent forking about the roots is also desirable. After the scaffold is covered, its own leaves will do all the mulching necessary. Should it be desirable to cut off any strong shoots or prevent the vines from extending in any given direction—for instance when too near a building, etc.,—they must be cut off when in full leaf; June, July and August are preferred, if cut in December, January or February, the vines will bleed injuriously.

The Scuppernong may be grafted upon the Wild Muscadine in March and April, but does not generally succeed. It has also been frequently propagated from the seed, but like nearly all other fruit, will not reproduce itself. The white variety, or true Scuppernong, generally produces a black, from the seed, and is usually inferior. Some of the seedlings produce red, some brown, some green, others yellow fruits. They begin to bear the third or fourth year, when the experimentor can reject the worthless, retaining only a few of the best to fruit another year. The sowing of the seeds bids fair to open up a large and extensive field for improvement. True, the majority will be inferior, yet if one should prove superior, the fortunate possessor, would reap a rich harvest for his trouble of sowing.

Productiveness. The number of bushels of grapes, borne in a single season upon one vine only, is so large as to be almost incredible, to any one who is not familiar with the Scuppernong. There is one vine not far from where I write, that was supposed to have fruit enough on it ten days ago to make a barrel of wine, and it is only a seedling ten years old. There is one in this county, said to have borne over one hundred bushels of grapes last year. In North Carolina it is not uncommon to find a vine thirty years old, bearing a hundred and fifty bushels. A widow lady near Brinckleyville, made ten barrels of wine, from less than half an acre, when the vines were only seven years of age. Another, two barrels from two vines, ten years old, running on the trees in her yard. There is said to be one in Florida, covering over more than an acre of ground and bearing immense crops. It is a well authenticated fact, that one vine has produced grapes enough in one summer, to make *ten barrels* of wine. The oldest vine on record is the one discovered by the colony of Sir Walter Raleigh, on Roanoke Island, 284 years ago. It was living and bearing in 1853. In North Carolina alone, there was manufactured last year about 100,000 gallons of Scuppernong wine. The crop this year will be much greater. Notwithstanding the facts, some Northern writers have been amusing themselves, by attempting to ignore this grape altogether, saying it would not make wine at all, thus making public their own ignorance.

[We must bear in mind that "Northern writers" usually consider that only as true wine which is made from the pure juice of the grape, without the admixture of brandy, sugar or any other external substance. Now as we understand it, Scuppernong "wine" has to have this addition, at least Mr. Miller himself, who is pretty good authority, in his article in our last March number says: "A pint of whiskey or brandy, or two pounds of sugar, or a quart of brandy and sugar, are added to each gallon of juice." Now if it takes a pint of whisky, or a quart of brandy, to every four quarts of juice, surely any Northern writer is justified in amusing himself at the idea of this being *wine.*

The Scuppernong grape will not grow to any advantage North of the Potomac, we therefore know nothing of its value as a wine grape from our own experience. We should be very glad if some one will inform us whether this grape will make a good wine without any adulteration. —Ed.]

THE CATAWBA GRAPE IN VIRGINIA.

BY STEUBEN, CENTREVILLE, FAIRFAX CO., VA.

Having noticed an inquiry some time since in the *Tribune*, which was made at the Farmer's Club, New York, and having pretty extensively examined Virginia on the subject of that inquiry, it occurred to me that some of your readers might be interested in my investigations. I am from the Grape region of New York.

The inquiry was, "Can the Catawba grape be successfully grown in Virginia?"

I have seen that vine in my travels here in all its stages of growth, and several times during its fruiting season, I have never noticed any mildew, and hardly any rot. There are vines on the place, on which I am now staying, in fruit, the clusters perfect as any I ever saw, the leaf fresh as in June. The wine from this grape was highly esteemed here during the war, and one large vineyard made a great deal of money. I think I can say then, that the Catawba grape, as well as all of our new varieties, may be successfully grown in this neighborhood, which is about 20 miles from Washington, and near the Orange and Alexandria R. R. It is a healthy country, abounding in springs of soft water.

Good grape lands sell from $10 to $25 per acre. The people are friendly and desire Northern emigration. The valley lands grow grass, wheat, corn, &c. If you publish this, I may occasionally keep you acquainted with the progress of events in this neighborhood while I remain here.

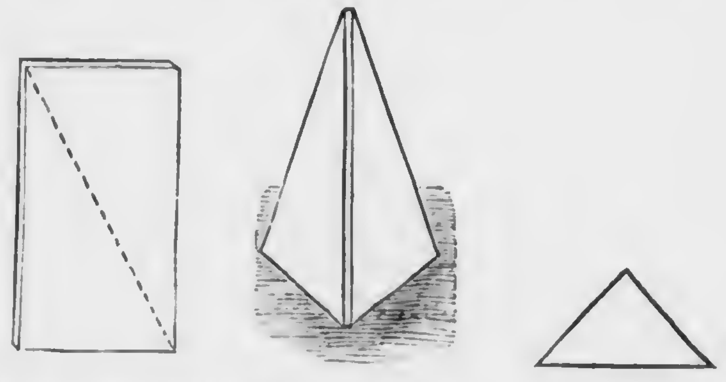
[We are often surprised that any inquiry should be made as to the capacity of Virginia to produce grapes. It ought to be the paradise of grape culture, not only for the Catawba but for all kinds of grapes. It has the best of grape soils and grape climate, and wants nothing but grape men. If Virginia would furnish a Longworth, Buchanan, Campbell, Knox, Grant, Hussman, or some other similar element of successful grape growing, we fear Iona, Pittsburg, Delaware, Cincinnati or Hermann, would be little heard of. That is the only element we ever found, on analysis, Virginia soil deficient in. We shall be glad to hear again.—Ed.]

WINTER PROTECTION OF ROSES.

BY R., SPRINGFIELD, ILLS.

The climate and soil of Central Illinois are very hard on roses. In some seasons all kinds are winter killed, except the Scotch roses, and we find it necessary to protect about all of our roses in winter. I have for many years tried most of the usual means of protection without satisfactory results, and have lately adopted a plan which has proved much better than any that I have tested. I describe it to you as follows, for your *Monthly*, if you think it is worthy of the space it will occupy on your columns.

I take cheap boards, about an inch thick and a foot wide, and cut them into lengths of three feet. Three of these lengths make a box for one plant. One of them is sawed diagonally from opposite corners, making two pieces. The four pieces are set on end and nailed together, making the appearance of a steep tent.



Just before the setting in of severe winter, the roses to be protected are cut down to three feet in height (or less) and otherwise pruned. A small mound of earth is drawn around each plant and a box placed over it, and held in its place by earth drawn up around it, on the outside; an augur hole of 1½ inches being first bored at the top and also near the bottom of the box for ventilation.

I have used this means of protection several years and find it very efficacious, and it has been adopted with like satisfactory results by other amateur rose growers here. It proves very convenient and cheap, involving less labor and expense than any of the old methods of covering. I make several sizes of boxes, to suit large and small plants, those above described (3 feet high) being the largest. Only nine feet of the commonest boards are required for the largest sixed box. A common laborer can make them, and they will last twenty years or more if sheltered when not in use.

[We give a sketch of this good idea. The board showing where sawn across at the dotted line, the box elevated, and the ground plan.—Ed.]

VINEGAR MAKING.

BY HON. I. D. G. NELSON, OF FORT WAYNE, IN.

Read before the Indiana Horticultural Society.

"Pure cider vinegar" is advertised and sold everywhere by vinegar manufacturers to dealers and traders, and by them with honest intentions, no doubt, retailed out to consumers as such, when in fact, it is made of the most deleterious acids and poisonous compounds, and does not contain a single drop of the juice of the apple.

Dr. Daniel Lee, a well-known eminent chemist, when in Washington City, wrote a lengthy article for the "*Country Gentleman*," on the "art of vinegar making," from which the following brief extract is taken.

"There are many reasons why the art of making vinegar, by the quick, scientific process, should be universally known, a few of which I will name: 1st. It will drive out of the market diluted oil of vitriol, now extensively used under the name of vinegar, to the destruction of human teeth, the injury of the bones, and of general health. Twenty dentists are now required to take care of the damaged teeth of a population that would have employed only one forty years ago, when vinegar was *acetic acid* derived from a vegetable source, unadulterated by any mineral acid or poison.

2d. "Acetic acid in hard cider, and in many other forms, has long been known to prevent jaundice, bilious fever, constipation of the bowels, ague and fever, and other not uncommon maladies. In a word, if properly used, vinegar is a fruit and plant acid of inestimable value, and no more need be said in its favor in this connection.

Grapes, currants, and all berries; sorghum, beets, and other vegetables containing sugar, will make good and wholesome vinegar, according to the Doctor's theory, and should be used rather than resort to the poisonous substances of which the vinegar now in general use is composed. Whisky, for many years, was extensively used in the manufacture of vinegar, and furnished a large portion of the commercial vinegar usually found on the market, but when the revenue tax of two dollars per gallon was added, it at once stopped its manufacture into vinegar. In addition to this, the great scarcity of apples, owing to the successive failures of the crops in many sections of the country, created a sudden vacuum, which afforded an opportunity for another substitute, and the result is, as has been carefully estimated, that not more than one barrel out of every six hundred and fifty, marked on the head "pure cider vinegar," and sold as such, is made from apple cider, or contains the juice of a single apple, but is manufactured out of everything else, and in most cases composed of the most villainous compounds imaginable.

During the discussion on the subject of the destruction of orchard insects at the North American Pomological Society meeting at St. Louis, last September, I took occasion to say that I considered the best and most certain method of destroying a considerable portion of the apple moth, was to gather up all the fruit as fast as it fell from the trees and put it into vinegar. It was a method I had very satisfactorily pursued, and had recommended it to others, answering as it did, the double purpose of destroying a large portion of the worms, and converting the fruit that would otherwise be lost into vinegar. At our own State Fair, held at Terre Haute soon afterwards, the subject was again called up at a meeting of the Herticultural Society, and I was requested to prepare a paper for the transactions of this society on the subject of vinegar and vinegar making, which does not seem to be so well understood as it ought to be. My method is exceedingly simple, and enveloped in no mystery whatever. I have no secret to withhold, no underground cellars or vaults, no private apartments ornamented with placards, "no admittance."

My cider house is constructed with a view to convenience and economy in the manufacture of cider and vinegar, and is used for both alternately as the season requires. During the fall and until all the apples are ground up I make all the cider I can, and store it away in pipes, barrels, &c., under an open shed convenient to the cider house, where it will undergo vinous fermentation, and by the addition of a little good strong old cider vinegar it frequently gets quite sour before cold weather, and sometimes is fit for market by adding a little more strong vinegar. As soon as we are through making cider for the season, we remove the horse power, (endless chain) grinder, pressing crib, vats, pumice boxes, etc., out of the basement of the cider house, and commence at once filling it with double and treble tiers of barrels of racked cider from the shed; start up the fire in the furnace, which is so constructed as to be out of the way when making cider, and the cider house is thus quickly converted into a cheap and excellent vinegar house. The thermometer is kept at about 75° fahrenheit, and the process of vinegar making commences at once. If some of the casks appear a little "lazy," and not inclined to make vinegar as fast as they should, I take empty casks and put four gallons of the best vinegar in each, and drip slowly the contents of the sluggish casks, sometimes through hard wood shavings, but more generally over a board, into a dripping trough, then into the casks prepared as above—the object being chiefly exposure to atmospheric air, by reason of which it becomes acetified. Thus it is quite frequently the case that the laziest casks are first fit to go out of the vinegar house, which we remove, as well as all others, as fast as they are ready, to the cellars, where they remain until required for market, so that by the time the house is required again for cider making, all the old cider is converted into vinegar, and removed out of the way. The endless chain horse power, cider mill, vats, etc., are put back in less than half a day, and the vinegar house is now converted into a cider house again, and the work goes on as before. The apples are scooped out of the wagon and thrown upon the upper floor, through a convenient door, when they run off on an inclined plain to such a part of the chamber as they are needed, or at once run into a hopper that feeds itself. The whole work is done with a small amount of labor, which is one of its chief recommendations.

This is, in brief, my method of working up a few thousand bushels of apples, many of which were formerly wasted, or from which I realized a very insignificant sum. The same thing is within reach of any farmer who can command a few hundred dollars to start with, on a cheap scale, and out of which, if he has the apples himself, or can purchase them at a reasonable price, he may soon build up a lucrative and legitimate business, and at the same time be of permanent usefulness in furnishing consumers with a genuine article of healthy acetic acid to take the place of the poisonous stuff now in general use.

HOW TO MANUFACTURE YOUR OWN VINEGAR ON A SMALL SCALE.

The recent manufacture of ethers by chemical process to resemble the aroma of fruits and the bouquet of wines has afforded unscrupulous persons an opportunity of practicing deception to an inconceivable extent, in the manufacture and sale of adulterated vinegars. To persons familiar with or accustomed to handling a pure article of fine vinegar, the fraud will be readily detected: but the imitation is so perfect, that the only safe course for the consumer in many cases is to manufacture his own vinegar, the process of which is as simple as it is complete.

Purchase, if you do not have it yourself, a barrel of sweet, rich juice, made by a reliable man from sound, ripe apples; get a good iron bound barrel paint it well with two coats of white lead and boiled oil; purchase ten or fifteen gallons of pure, strong cider vinegar, and put it in the iron bound cask; place both casks in the cellar or other convenient place, with faucets in each and bungs out. After the juice has thoroughly fermented and settled, commence putting the cider into the vinegar cask; a good rule is to put in twice the quantity, and as often as you draw out the vinegar. Thus managed, you will in a reasonable time, have a full barrel of vinegar, equal to the original, and need have no further trouble about not having always on hand an abundance of pure, rich, healthy, high flavored aromatic vinegar.

WINE VINEGAR.

This is a distinct kind of acid vinegar, and perhaps is entitled to be classed by itself, in contradistinction to that manufactured and sold as cider vinegar. But it is manufactured, (in this country particularly,) only on a very small scale, and is in no sense equal to cider vinegar, lacking all the requisites so desirable in that article; but by being called wine vinegar, some persons may labor under the impression that as wine is generally esteemed higher than cider, so ought the vinegar to be better. The facts, however, do not justify any such conclusion. Aside from this, the consumer is peculiarly the victim of imposition, for when it is recollected that the price of the poorest wine is much higher than wine vinegar is sold for, a moment's reflection will discover the fraud. It is enough to say in this connection, that it was facetiously remarked by a shrewd chemist, "that diluted oil of vitriol made the finest *white wine vinegar* in the world!" This is well understood to be the article frequently if not generally used in putting up fancy pickles in glass packages, so extensively sold in market, to the destruction of the stomach and teeth of the consumer.

WHY DOES VINEGAR SOMETIMES PUTREFY?

Cider vinegar never does putrefy. The older it gets, the more body, and the stronger it gets. But all vinegar manufactured from acids is composed, of course, almost entirely of water. It has neither body nor substance, and is therefore liable to putrefaction, which frequently occurs. As so large a portion of the manufactured vinegar is composed of water, and as some persons *will* use it, it becomes highly important that the water should be entirely pure. But what assurance have we that it is so? On the contrary may we not have serious apprehensions on the subject. Pure rain water well filtered is alone fit for the purpose—so vinegar authors and patent receipt venders say. But how often, let me ask, is it used in that form ? Most if not all of the chemical factories are located in large cities, hence we may reasonably infer that much of the water is very far from being pure rain water, much less filtered. And may we not also have good reason to suspect that at least a portion of the water used, if not absolutely filthy, as is alleged, contains organic matter that causes the vinegar (as it is called,) to putrefy or become infested with "*vinegar eels,*" and other "creeping things," rendering it as unfit to be taken upon the stomach as bacon infested with the *trichina*. Add to this the fact, that those who would manufacture vinegar out of poisonous drugs, would not be apt to be scrupulously particular about what other materials were used in its manufacture, and you may have *some* reason to fear that it may not be in *all respects* a healthful condiment or beverage.

It is a well known fact by all grocers and dealers in vinegar, that the only vinegar that will stand the test of all degrees of temperature is cider vinegar. One of the largest grocers in our city informed me that they lost a number of barrels of "*acid*" vinegar on one occasion, by the frost of a single night. It was bought for "pure cider vinegar", and so branded upon the heads of the barrels, but when it thawed out it was simply *putrid water*. I hear of several other wholesale and retail dealers who have suffered in a similar manner, in fact it appears to be well understood among dealers as of a very common occurrence. It is proper to say, perhaps, that all vinegar manufactured from drugs, acids, and other foreign substances, although becoming flat and insipid by freezing and thawing, will not, if kept in a cool cellar, always become at once putrid. Good cider vinegar will stand any extreme of heat or cold. I care not how much or how often it is frozen, it will never change its character into anything else.

HOW TO KNOW PURE CIDER VINEGAR.

If tests of taste fail, its *aroma* will not. A peculiarly rich and agreeable aromatic odor is always observable in all *rich* pure cider vinegar when drawn from the cask. To imitate this fragrance, so pleasant to the smell, (hence so desirable to cover up the frauds of poisonous compounds) a few drops of fusil oil is added to give it odor, and burnt sugar and other substances to give it color ; thus every device that ingenuity can suggest, by calling in the aid of chemistry, is resorted to to make "*pure cider vinegar*" out of anything and everything else but *cider*.

The fact that all acids manufactured are palmed off as cider vinegar, ought to be sufficient to satisfy the most stupid that nothing but the juice of the apple was ever intended or should be used to any considerable extent for vinegar, since it is the only fluid that will of itself and without the aid of artificial means, make an acid that is agreeable to the smell, grateful to the taste, and healthful to the system, and which at the same time defies the skill of chemical science to successfully imitate. This aroma is produced from a sweet smelling ether, present in all apples, but far more abundant in some than in other varieties. So perceptible is the fragrant oil in the skin of the Northern Spy, Rambo, and many other sorts, that the opening of a single barrel will scent the whole house in a few seconds. It is this peculiar quality that is so charmingly brought out in the acetous fermentation when undergoing the chemical change from cider into vinegar.

NOTE ON EVAPORATION AT LOW TEMPERATURE.

BY MR. A. FENDLER, ALLENTON, MO.

In the September number of the *Gardener's Monthly*, page 272, I find that some of your friends have professed themselves horror struck at the "absurdity" you teach, that there can be any evaporation from a tree at a time when "all the juices of the tree are frozen solid."

From this it appears that the following facts are not generally known among horticulturists, though they are familiar to every meteorological observer who observes the dry and wet bulb thermometers, namely, that ice and ice-bound objects generally, even at a temperature far below zero, *do evaporate*, provided the atmosphere be dry enough and in motion.

The dryer the atmosphere, and the faster it moves, the greater will be the evaporation. And the greater the evaporation is, the greater will be the reduction of temperature of the evaporating object. To give you a few instances that came under my observation last winter, I will mention the following :

Date.	Dry Bulb.	Wet Bulb frozen.
Jan. 9, 7 a. m.	3°	1°
" 17,	2	1
" 29,	2 below zero	3½ below zero.
Feb. 11,	5 " "	6½ " "

EDITORIAL.

GRAPES NOT SETTING.

A new work on the theory and practice of Horticulture is very much wanted. Botanical Science has progressed amazingly the few past years. What is now wanted is some good practical mind to gather together all the loose matter lying around, and evolve from them rules for the guidance of the cultivator.

In the matter of plant fertilization alone, the science of the present day, is entirely unlike the past. Yet it, is so far, abstract science only. Practical men have not yet learned to appreciate the progress made. Let any one look back twenty years at what was then known of the sexes of plants. The writer of this present article was held up as a horticultural infidel of the deepest dye, for daring to maintain the possibility of a pistillate strawberry developing its stamens sufficiently to fertilize itself. The sexes were declared to be utterly unchangeable, and in order to make the author ridiculous he was charged with teaching that "cows could be changed into bulls." and so forth. With the exception of the late Drs. Darlington and Kennicott, the writer found no friend of eminence to aid him in his struggle with this vulgar error. But now that Darwinism has turned popular attention to the functions of sexual organs in plants, the tide has set full in the direction our little stream essayed to flow. It is now the almost universal belief that plants abhor self fertilization,—that they make the most strenuous efforts to prevent it, and that, though they are not always successful in this, they always make better use of foreign pollen than of their own.

It has now become almost a matter of wonder that nature ever united the two sexes together in one individual flower. It is clear that when Salmacis prayed to the Gods to unite her in one body with her heart's beloved, Hermaphroditus, she made as great a mistake as the Israelites when they begged for a king to rule over them. So far as Flora is involved in this Salmacian ruin, her annual progress is one continued effort for divorce from the hated union. Is it any wonder then that in this mutual abhorrence, one or the other organs—the pistil or stamen—should gain such predominance as to render the other impotent for the purposes for which it was intended ? or that one organ, temporarily over-ridden, should at times receive a sudden current of vitality sufficient to enable it for a short time again to assert its powerful existence ? This is really the fact, and in so far as the grape is concerned, explains why some varieties, sometimes are unproductive. In other words, why they do not sometimes technically set.

It was at one time supposed that only the American species had imperfect flowers, but T. Meehan and Dr. Engelman have shown in the Proceedings of the Academy of Natural Sciences of Philadelphia, that male forms of *vitus vinifera* exist in Italy, and other parts of the world; and it is this imperfection, as either the male or female parts of the flower predominate in power, that causes the difficulty to set the fruit at times in hot house grapes. This imperfection is not the result of any peculiarity of soil or culture, but of an innate tendency to a separation of the sexes. This tendency may be aided in its development by external circumstances, but the principle must be there for the circumstances to operate on.

Another curious law has been discovered, that not only has the plant an aversion to its own pollen, but there are outside individuals for whom it has a greater affinity than others. Hence when we have a vine with pistillate flowers, we can only tell by experience what variety will be best to fertilize it with. Amongst grapes, some of the Muscats and the Barbarossa are notoriously bad setters, and need impregnation from others to set well. Whether the Black Hamburg or others with vigorous pollen is best for this purpose has yet to be tested by actual experiment.

When a vine has a habit of bad setting, the flowers should be examined. If the pistillate organs are perfect, artificial impregnation is all that is needed, but if they are inferior, and the male the most fully developed, it is best to cut it away and replant.

We think no grape is free from this tendency to vary its sexual organs. We have seen in the same vinery plants of Barbarossa which set every berry as perfect as could be desired, while others fruited very indifferently, all under the same treatment. In such cases it is usually the pistils which are at fault, the only remedy for which is to cut the weak brother away, and replace with a young one from that other vine which has maintained its good character.

It is perhaps worthy of note, that the tendency in most plants is to preserve its staminate form more inviolate than its pistillate one. It would seem as if the plant—the female plant—half regretted separating from its masculine "half," and in such cases allowed the stamens to develop themselves. This is the case in most instances recorded. Pistillates rather than staminates revert to the Hermaphrodite form. Dr. Braun tells us that many willows taken from the female plant, which waves, or did wave over the tomb of Napoleon at St. Helena, have produced frequently male flowers, or transitional grades of female into male flowers.

We need not repeat the lessons which these facts expose to the practical man. They open to him the clear cause and the cure for his uneasy fruiting grapes, which he will see is entirely within his control.

THE AMERICAN ARBORVITÆ.

We think this tree is not half as well appreciated as it ought to be. It is so hardy that neither frost or wind injures it very much, in even the most exposed situations. It never grows out of beauty, as there seems to be a well maintained power of developing its lower branches to the last. It is well adapted to small places, because of its close and upright habit. It adapts itself to any soil, wet or dry, or any situation except under the shade of trees. Its only defect is a slight tendency to browning in the winter season, which hue is however dissipated by the first warm sun of March or April. For standard trees on lawns, or for groups, for hedges or for screens, we have absolutely nothing to take its place; our yards, gardens, parks and cemeteries, would be badly off indeed without this extremely useful plant.

Notwithstanding it grows naturally thick, there are few things which pruning more improves. A chief point is never to let it have more than one leader. A single straight trunk is the great charm in a specimen Arborvitæ. The strong tops, leader and all, should be sheared or cut with a knife in June, a new leader soon forms, the result of this is that the vital force being checked in its upward development, is thrown more into the lower branches, besides the increase in general number of branches thereby.

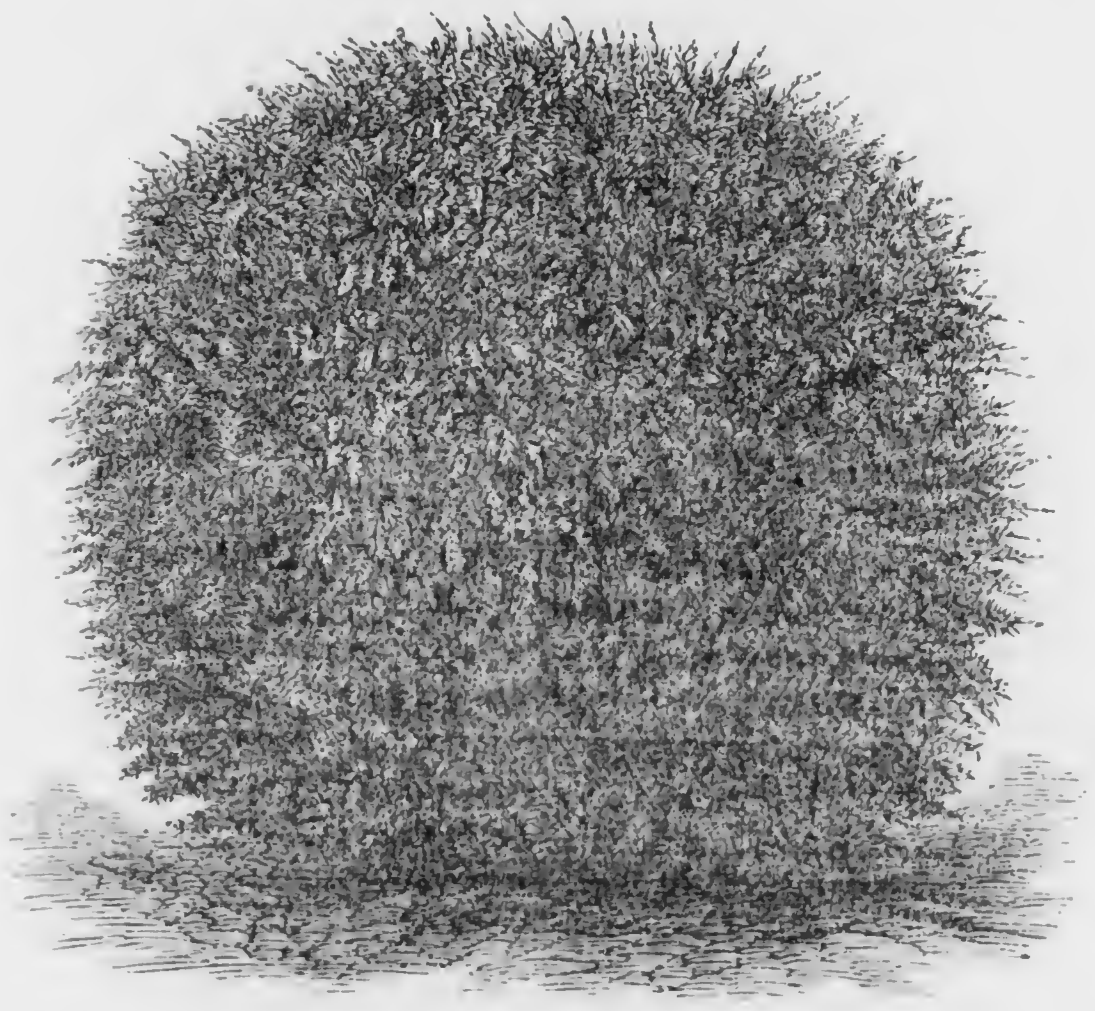
The Arborvitæ has branched into many varieties, all of which have their separate uses. In former times, when it was believed that species were in form exactly the same ten thousand years ago as now, these varieties would be considered as simply the results of "Domestication." Papers by the Editor of this journal in the proceedings of the Academy of Natural Sciences. shows that variation is just as great in a state of nature, as under cultivation ; and the Arborvitæ well illustrates this. The varieties are numerous, but most of them have been produced by selections from plants collected in America's native woods. Man's art has had nothing to do with their origin, but they have been originated by the plants own innate power of development.

One of the best known of the variations from the common type is the *Siberian*. This is of a pyramidal habit, of rather slow growth, reaching about six feet in ten years. It has a bluer tint than in the typical form. Its shoots are also thick and coarse looking, and good judges can readily tell it from all others by this character alone. It is very desirable as an intermediate. where a very dwarf or very tall form would be out of place. The variety *plicata*, is like unto it in most respects. It grows about the same height, and in the same form ; but the leaves are paler, and the flat branchlets have a more twisted or plaited (plicate) form. The twigs are more slender and the plants does not grow so close.

The next best known variety probably is the *Hoveyi*. This grows very much like the Golden. (which is not an American descendant,) but is not quite so conical or graceful, nor quite as deep a golden color ; but is sufficiently a *fac simile* to merit the name of American Golden. Its branching character from the base is enormous, and it requires a very watchful care in pruning to one leading stem in infancy, or the branches will fall apart when aged, by every heavy rain or snow storm.

There is a new golden dwarf Arborvitæ, distributed by Mr. A. S. Fuller, which is a gem. The color is the deepest gold. We have not seen any plants large enough to enable us to judge of its proper or best uses in ornamental gardening. Another very interesting form is one raised by Mr. Buist, called *Cristata*, which has the end of the branch somewhat bunched, as if it were a cockscomb in all but the color. This we believe grows nearly as strong as the common Arborvitæ, and will on that account be the more valuable. Mr. Buist, well knowing the habits of Americans to under value the productions of their own nurserymen, sold a large lot in Europe; and we are pleased to note that many of our amateur importers are getting them from Europe at high figures.

Among the very dwarf Arborvitæ is the *globosa*. This has been about Philadelphia for twenty years or more ; but was first made prominent by Mr. Bright of the late Logan Nursery, and is yet known amongst many gardeners as Bright's dwarf. It is possibly distributed through the country under various names. It is more slender and twiggy than any dwarf, and grows in the shape of a perfect globe. We give the following cut in order to aid our readers in identifying it if they have it.



Its growth is very slow, the plant from which our engraving was made, is but three feet high, though twelve years old. It has the power of rooting from the stems easily, like box, and will no doubt prove a perfect substitute for box, where that useful plant is not hardy. We have seen some beautiful edgings made of it.

Another pretty dwarf is the *pumila*. This looks something like the Siberian, in deep color, but has a steel tint with it. The plant is also much dwarfer, and the growth is somewhat plicate or twisted.

A new class of dwarfs has come out with Heath leaves. Two have been named, and are called *ericoides* and *Tom Thumb* ; the first of these grows rather more pyramidal than the other, but are alike in all other respects. Similar forms have been found by Messrs T. C. Maxwell, and recently by Mr. Burgess of New York and probably by others. So different are they from the usual forms of Arborvitæ that they were at one time supposed to be "some Japaneze species." They are now known to be true forms of American Arborvitæ ; and they afford one of the bases for the new "Theory of adnation in Coniferæ," which explains this and many other forms of Coniferæ, giving the rule by which their antecedents or primordial origins may be traced.

Like the Globe Arborvitæ, these Heath-leaved forms roots very easily, and will make excellent garden edgings. They turn purple in the winter season.

There are other varieties not widely known, but no doubt of much value. Too much attention cannot be given to selecting forms of this useful plant.

SCRAPS AND QUERIES.

Apples on Grape Vines.—In our last we made some remarks on the galls sent us by Jas. Jones. Mr. Stauffer kindly hands us the following remarks about them :

" I owe you an apology for not answering yours of the 18th inst. sooner. The galls you sent me differ from those I have met with, both on the domestic and wild Grapes, and are produced by an insect never before detected on the Grape. On opening one of the galls, I found a number of orange colored grubs, rather attenuated in front, without any excerted appendages whatever, and in character like those I have found in galls made on the low willow bushes. The gall, however, instead of being a single cell, appears to be composed of three or more, and peculiar in conformation and texture.

The galls formed on the Willow are caused by a two-winged fly(Diptera),—the *Cecidomya salices*, described by Fitch. The C. robiniæ attacks the Locust, and this may belong to a new species —C. vitis.

I feel satisfied that it does not belong to the ordinary four-winged gall flies (*Hymenoptera*) ; nor to a species of Aphis or Curculio. It is evidently a species of Cecidomya, or closely allied.

The maggots are lively, and I shall try to raise the fly out of one of the galls sent me. Should I succeed in raising the fly, I may (nay, I will, health, &c., permitting,) send you a copy and fuller description, among other like galls, such as made by the Tephristis Asteris,—large swelling found on our native Asters ; these are, however, spongy, and contain but a single maggot, although they attain to the size of a walnut. Also, galls produced by a kind of Aphis, (Brysocripta), on leaves of the Elm, and another species on the leaves of Alnus, &c.

Apples Destroyed by Spring Frosts—*A. W., Phillipsburg, N. J.*, inquires "if there is any way to prevent apple blossoms being destroyed by early spring frosts." [Plant late blooming varieties is the surest remedy. In this vicinity, Raule's Jannet often bears when others do not, because its late flowers escape.]

Root-grafted Trees at Wolcott, N. Y.—*D. C.* says : "Our fruit crop on Lake Shore, and for 10 to 15 miles from the Lake, is very fine. Apples are A No. 1 ; so with Grapes, Plums and Quinces. Some small orchards, containing 3 or 4 acres of ground, will produce $1000 worth of Apples. If some of our friends could see how these *root-grafted* trees are loaded with fine fruit, it would cure their whims, and they certainly would not want any better fruit, or any more of it per tree."

Keeping Cabbage Plants.—We replied, last month, to a correspondent about keeping Cabbage under glass. Since then he writes to say he meant Cabbage *Plants*—whether they will keep as well during winter under boards as glass sash, in Northern New Jersey ? We think better, provided they are aired occasionally. This is the practice of the best Philadelphia market gardeners.

Sporting Dahlias.—*J. B., Hammonton, N. J.*, writes : "Is the circumstance of a Dahlia bearing, on the same stem, bloom of different colors, a common one ?

"Amphion," imported by me last spring, is, at this writing, (and from all appearances may continue) bearing flowers, on opposite branches growing out of the main stem full 3 feet from the ground, of amber, striped and spotted with cherry. This is, I believe, the true flower, while on the other branch are those of a most superb carmine, of a clearness and intensity unequalled in any other Dahlia within my recollection."

[Not common, but yet not unusual with all striped flowers.]

The Iona Grape.—*J. K., Dubuque, Iowa.* writes : "My experience with this extravagantly praised grape, would be rather too agonizing to relate. Out of a number of $5 and $3.50 vines, I have now one left, and that one feeble. My neighbors fare but little better. And the year's experience has been given to it, with poor results in this section of country. Mr. Mead's book has been the cause of my getting into this trouble. If time permits, I shall review some portions of Peter B. Mead's book."

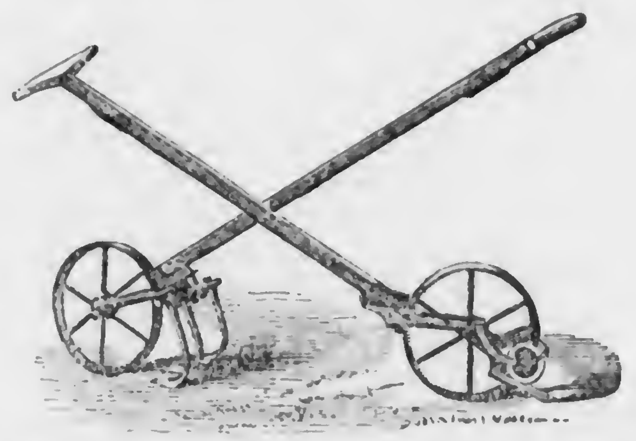
Berberry Fruit.—A *Needham, (Mass.)* correspondent tells us these bring the same price in market as Cranberries.

Quince Worked on the Pear.—A Massachusetts correspondent inquires whether this can be done to any advantage ? The Quince takes very readily on the Pear ; and where the Quince borer is very troublesome, there may be advantage in it. The borer, of course, works only near the ground, as a general thing. When high grafted, the Quince is therefore out of its reach.

Seedling Okra.—*Mr. James Lamont, Pittsburg, Pa.*, sends us a seedling Okra for our opinion. It appears different to any we know, and is very pulpy in comparison with the others. We believe it will be a valuable addition to our list of vegetable varieties.

Wheel Hoes.—We have often wondered why these have not been introduced. We manufactured one for ourselves some years ago, which worked very well ; and we described our plan at one of the Fruit Growers' Meetings, at Harrisburg, some years ago, but it does not seem to have taken.

Mr. M. C. Goodwin, of Hamden, Conn., now sends us one, which is at least as good as our own, and we cordially recommend it. The following is a cut of it :



By changing the machine slightly, it makes an excellent strawberry cutter, for taking off runners.

Hedge Plants at Iowa City.—*T. C. L.* remarks : "We, in this cold climate, find that Osage hedge does not do well for fencing, and wish something that will stand frost better. How does the English Hawthorn stand the weather ; is it hardy, &c. ? Is there anything better suited to a cold climate than the English Hawthorn? We want something that will make a green fence, and not die out every few years. Do directions for the care of Osage hedges apply to all alike ?

[The Hawthorn is very popular in Britain, where people hope to live for an hundred years. With Americans' short lease of life, we fear it would be pronounced too slow. Some hedge plants in Britain are called "slows," and these Hawthorns "quicks ;" and we have often wondered, if these are the *quicks* at hedge making, what must the *slows* be ? We have no experience of the Hawthorn at Iowa City—we suppose it would be hardy there. We should rather try Buckthorn or Honey Locust ; even the Berberry than the Thorn. Osage directions will only do for other hedges in a very general way.]

St. Louis Public Park.—We are gratified to hear, from a correspondent, that the City of St. Louis has accepted Mr. Shaw's liberal donation of land for a Public Park, and have appropriated $360,000 for the improvement of the same. From our experience of the influence which public works of this character have on the prosperity of a city, we are satisfied St. Louis will find this one of the most profitable investments it has ever made.

Magnolia Seed.—*J. A. K., Newton Centre, Mass.*—Magnolia seed should have the pulp washed off as soon as gathered, and dried in the shade ; after that, mixed with nearly dry moss, powdered, and kept that way, in any place where no fire is kept, till spring.

Seed Drills.—A correspondent in *Indiana* would be glad to know what is the best drill for the purpose of sowing Apple, Osage Orange, and such seeds. We do not consider any in the East much better than hand-labor, and shall be very glad to know what has been found best in other places.

Grape History.—An *Ohio* correspondent winds up a rather tart note by saying : "In short, I think if you will weigh the facts fairly, I am sure you must agree that to Mr. Knox, and not to Dr. Grant, is due the great credit of making grape culture as popular as it is now."

The answer to our former correspondent was as to a point in chronology. We see nothing to retract. Dr. Grant was working to make people plant vines long before Mr. Knox was heard of. He deserves, and must have, the great credit of inducing thousands to plant Grape Vines who would never have done so but for him. Indeed, we are not sure but to Dr. Grant's exertions or example is due the fact of Mr. Knox's being in the grape field at all.

This much is due to the truth of history. As to Mr. Knox's part in this great grape success, it is equally creditable. Grant has shown the people how to get plants—Knox has shown that they can get the fruit. We now see Knox's grapes in every store, just as we used to see Grant's grapes on every farm. The friends of the one need not be in the least alarmed at the credit given to the other. Both are equally deserving—each in his own line.

This correspondent hints, but does not exactly say, that some personal friendship may have dictated our opinion. So far as this writer is concerned, we should treat such a suggestion with silent contempt. Others, however, may have similar thoughts; and we may as well say, that "if we know ourselves," we never allow friendship for any one *personally*, to interfere with our *public duties*. Indeed, were it not so, our opinion in this case might be different, for we have certainly had much more occasion for friendly intercourse with Mr. Knox than Dr. Grant.

This personal matter is distasteful to us, and we almost beg pardon of our readers for introducing it; but we like to meet every correspondent with courtesy, however unfair.

Christine, or Telegraph Grape.—"*Hestonville*" says: "Why do nurserymen persist in calling the Christine Grape, (first grown here by Mr. Christine, and known for many years in this locality as one of the best, if not the best early native, as it does not mildew, or cast its fruit when ripe, as the Hartford: both ripen the same time.) the Telegraph.

This is unfair. If Mr. Freas, of the *Telegraph*, has ventured to father this, and call it Telegraph, why should others still persist to try to establish it by a wrong name. It was so labeled at the last Horticultural Exhibition, and also Christine was exhibited at another table. J. Rutter, of W. Chester, advertises 3000, and calls it the Telegraph—perhaps his Telegraph is not the *true Christine!* Bailey & Co., also. Are they foisting on us another seedling? Sure we have plenty of them, now-a-days Fruit trees of all kinds seem a drug—soon a losing business.

Is this Telegraph the old Christine or not, or Mr. Freas' seedling? Rutter says, 'best in cultivation,' which it is not; 'a constant and reliable bearer,' which it is; 'ripe before the Concord,' true; 'commands the highest market price,' it does not. Who saw it the first year it bore—10 years ago, aye, 12 years? It is no greater bearer than Isabella. By careful pruning, cultivation and rich soil, it improves, but does not continue to improve, as he exaggerates. 'It is a good, desirable and reliable grape, and that *is all* for an *early one.*' But it is poor flavor, and surpassed by others in quality. It stands a fair competition in its way, and is evidently a seedling from the Summer (*V. æstivalis*) Grape."

Disease in Vine Leaves.—*N. H. R., Springfield, Ill.*, sends us the following, with the leaf. This sudden scorching of leaves, both of grapes and other things, we have never been able to account for in any way that seems entirely to satisfy us. We give the note just as we received it, and may return to the subject hereafter. In the meantime, we should be obliged by further facts from other correspondents:

"I will be greatly obliged for your opinion (if ever so brief) on the following matter:

The principal walk in my fruit garden is 10 ft. wide, and runs east and west. On each side of it is a long row of grape vines, with a gravel walk, 9 feet wide between them. As soon as the vines grew sufficiently to cover their galvanized wire trellis, I noticed that, when it became hot in summer, the leaves of the plants became crisped, as if scorched. I could not account for this. No other grape vines were so affected on my ground, or elsewhere here. I noticed that the Thrip were very numerous on the leaves, and I supposed that the mischief was their work; but after several years' attempts to dislodge them, I finally succeeded by a free use of sulphur, with the De Lavergne bellows, in getting rid of them. The trouble with the scorching of the leaves, however, still continued, and to such an extent as seriously to affect the grape crop.

I now noticed that the leaves, on both sides, next to the walk, were much more injured than those on the outsides of the trellisses. In fact, that the outside leaves were mostly uninjured; while those over the gravel walk were mostly destroyed. This was doubtless the case all the time, but it escaped my notice at first. I am now inclined to believe that the reflection of the sun's rays from the wide gravel walk may have been the cause the trouble.

Please give me your opinion in the matter. I

suppose that if such results ever arise from the reflected heat of the sun from gravel walks, you are aware of it, from your great observation and experience in such matters.

I do not like to tear up my walk on my own judgment only, and have ventured to write you before doing anything."

The Sulphur Bellows.—An Illinois correspondent says: "I have used it for several years, in my cold grapery, with the most perfect success. Before I tried it I had much trouble with mildew, and the house was full of thrip; so much so that their *excrement on the fruit made it unfit to eat.* The use of the bellows according to the directions, has effectually and entirely stopped the mildew, and driven off the thrips.

I do not believe that the efficacy of the sulphur bellows is as generally known as it ought to be.

I notice that Mr. H. W. Sargent complains of the ravages of the thrip in his graperies, in a recent article on fruit growing."

DOMESTIC INTELLIGENCE.

An Ancient Pear Tree on the Thorn.—Inclosed please find two pears (varieties not known) and which I picked from a tree that was grafted on a Hawthorn in the year 1808. The tree is now about fifty feet in height, having two main branches starting out six feet from the ground, where it was grafted.

The trunk of the tree, or old Hawbush, measures five feet nine inches in circumference, and the limbs cover an area of about thirty-five feet. The pears I present to you I picked off about forty-five feet from the ground. The branches of the larger variety form near two-thirds of the tree. The amount of fruit now on the tree was estimated by John and Jesse Brandt at 30 bushels. The former gentleman was born and raised on the farm on which the tree stands, and says he has known the tree for fifty years, and it has never failed to have fruit every year.—Correspondent of *Iowa Homestead.*

How Foreign Raisins are Made.—The Muscatel is the finest kind of raisin imported. The preparation of drying, upon which the value of the fruit to a great extent depends, is in its case conducted differently from that of the more common kinds. Usually the grapes are gathered in bunches when fully ripe, and hung and spread out to dry. These are afterwards placed in vessels full of holes, and dipped in a lye made of wood ashes and vanilla, with the addition of a little salt and oil. This brings the saccharine juice to the surface, and causes the dark brown color as well as the crystalization of sugar, which is so characteristic in the cheaper fruit. The best varieties are simply dried in the sun before removal from the tree.

The fruit is carefully watched, and when at the proper stage of ripeness, the stalks of the bunches are partly cut through and allowed to hang till dry, the fruit by this means retaining its bloom, and being a light color when dry. Among the many varieties of raisins known in commerce, are Vaiencias, Denias and Lexias from Spain, and Malagas and Malaga in Grenada. All these varieties of fruit are imported into this country in boxes and half boxes.—*Ohio Farmer.*

Rogers' No. 1 Grape in Missouri.—A Missouri correspondent of *Journal of Agriculture*, says: "In my own vineyard, I most of all admire a vine grafted in the spring of 1867, with a scion of Rogers' Hybrid No. 1. The two buds of the graft sprouted and made an enormous growth. Last spring, I made a dozen layers from this vine, tied up the main cane for bearing, and can now count on it from sixty to seventy large and perfect clusters, not one bud having failed, not one leaf or berry being injured in the least. If this vine shall—as I doubt not it will—make as good, or even a better white wine than the whimsical Catawba and the tender Herbemont, it will soon take a prominent place among our Western favorites. Originated in Massachusetts, it was long known in the Northwestern States, but not much heeded. Transferred into Missouri, it seems—like the Concord, of equally northern origin—to have found its congenial clime and soil, and will perhaps, hardy and prolific as it is, prove one of our most valuable new acquisitions.

It is a fox-grape, (Labrusca,) judging from the leaves and downy tendrils; but the character of the fruit is European, the large berries being transparent, very juicy, with a thin, glass-like skin, and without the least affinity to the foxy flavor. Most of the other Rogers' hybrids bear no similitude to the Lubrusca family.

INCREASE OF INSECTS.—At a late meeting of the Alton Horticultural Society, Dr. Hull said that each year was proving it true that "as we increase the products the insects increase." He added, that he had traveled extensively during the season, and found the peaches, apples, pears and plums generally destroyed. The curculios are sweeping everything before them, yet nine-tenths of the horticulturist lack the energy to give them battle. If they are not fought till vanquished, all efforts at raising fruit might as well be abandoned, for they would prove useless in the end.

Some consolation was sought to be derived from the discovery of an insect enemy of the potato bug as preluding one ot the curculio also. The former was described as a grayish, flat beetle, with a bill one and a half inches long, with which they tap the bugs and then suck them dry. They will clean a field of Colorados in a short time. If they would only serve the curculios in the same way, there would be hope for fruit growers in the future; as it is there is little or none.

GRAPES.—Grapes are unusually late this season, at least a fortnight later than last year. We stepped into the garden of Dr. Brown at Paris Hill, Sept. 28th, where we saw the Clinton, of which he has probably the largest vine in the State, pretty well ripened. The Diana was just beginning to turn. The Concord was ripening quite unequally, but many clusters were nearly ripe.

The Isabella looked hard and green. The Iona was about equal to the Concord. We were pleased to see the large buxom looking bunches of this new grape. It is certain from this example that it can be cultivated in Maine. The Delaware, which has been regarded an early grape, was as late as the Diana. It is the same in our own garden.—*Maine Farmer.*

SOUTHERN FRUIT GROWERS.—The Charleston *News* says: "About two years ago Mr. Derby, the well known New York publisher, purchased a fruit farm at Aiken, S. C., the property of Mr. Marley, for $12,000 or $15,000. Mr. Derby, moved his family to the farm, and went vigorously to work to make his investment productive. At first there were many difficulties to overcome, but Mr. Derby persevered, and we are assured that his profit has averaged $500 per month during the whole period of his possession. This handsome income was derived from the sale of peaches, apples, and grapes—the last having turned out to be very productive. There is still much to be done in the way of securing proper accommodation and quick steamship passage to the Northern cities before the fruit trade can reach its most remunerative point; but it is estimated that in a good year, with fair shipping facilities, the crop of Mr. Derby's farm willl sell for at least $12,000.

In addition to securing so sound and valuable an investment, Mr. Derby has recruited his health, which was delicate, and is now said to be of the opinion that Aiken is the healthiest place on this continent, and may be made one of the most prosperous.

The gentleman whom we have mentioned was not a practical farmer. Nor had he any experience in pomology. But he was an intelligent man of business, and gave the trees of old Aiken an opportunity of doing their very best. The success which Mr. Derby has met with will, we hope stimulate others to follow his example. Industrious, hard-working men could soon make the face of the country smile like a garden; and none could do it better, and more to their own advantage, then some of our steady, thrifty Germans, who have the knack of making a money machine of every undertaking to which they put their hands."

MUSHROOMS.—A jocose friend recently suggested to another friend that a mushroom means the onion of the fields. *Videlicit: champ-ignon*, a mushroom; from *champ*, a field, and *ignon*, which in French is pronounced *inyon*! Such is the depravity of man!

Mushrooms in France and Italy form not a mere luxury, but a staple of food. And this is not remarkable, since of all vegetables products there is none which is so much like flesh, both as regards taste and flavor, and the extraordinary amount of nutriment it contains. As an erotic stimulant the truffle far surpasses oysters, and is consequently, like oysters, in a high degree nutritious. Stewed with the addition of a little meat-gravy, mushrooms of any kind are extremely piquant, and when the taste for them is once acquired, they are preferred to any other vegetable.

Now that mushroom spawn can be purchased at every seed store, there is no reason why they should not be raised by every family. Even in cities this can be done.—*Philadelphia Press.*

FOREIGN INTELLIGENCE.

HISTORY OF SOME SELAGINELLAS.

S. DENTICULATA, Link. Fil. Hort. Berol., p. 159. Spring, Monog. 2, p. 82. A. Braun, Revis. No. 7. Lycopodium denticulatum, Linn. Sp. Pl., p. 1569.

Well marked by its prostrate growth, interlaced habit, and lax spike, so different from the close, rigid, tetragonous one of most of the others. When specimens are allowed to dry, the decurviture of the leaves is conspicuous. The color is dark green, with often a reddish tinge. The radicles are copious and moderately firm, the nerve green and only faint. From Madeira and Teneriffe, it ranges through the south of Europe and Barbary States, eastward to Asia Minor. A Madeiran specimen before me has a stem 15 inches long, with six branches on each side 5 or 6 inches in length. What appears to be the same plant was gathered by Menzies at the Cape, and a closely allied species, or perhaps a variety, was obtained by Welwitsch, in Angola.

S. BREYNII, Spring, Monog. 2, p. 119. A. Baun, Revis. No. 12.

This has the most robust habit, and broadest divisions of all the decumbent species. The color is a pale, shining, waxy green. It is most like some of the forms of Martensii in general aspect, but the habit is quite decumbent, and the leaves are much closer and more glossy, with the two sides nearly equal. It is a native of Brazil and Guiana. Braun mentions it as being in cultivation in English gardens under the name of Lycopodium panamense, but it is not in the Kew collection, and I have not met with it elsewhere.

S. UNCINATA, Spring, Monog. 2, p. 109. A. Braun, Revis. No. 11. Lycopodium uncinatum, Desv. Enc. Bot., Suppl. 3, p. 558. L. cæsium, Hort.:

Well-known in gardens for its iridiscent hues,—deep green in some lights, with a strong blue tinge in others, which quite disappear in dried specimens. Usually grown under the name of cæsia. The habit is quite peculiar. There are two forms, one less branched and very tender, soon shrivelling when gathered, and the other with a firmer stem, and more compound and longer branches. A native of China.

S. PATULA, Spring, Monog. 2, p. 96. Griseb. Fl. Brit. W. Ind., p. 645. Lycopodium patulum, Schwartz, Syn. Fil., p. 184. S. sarmentosa, A. Braun, Revis. No. 14.

A native of the West Indies. In identifying it with the L. patulum of Swartz, I follow Dr. Grisebach. It is nearest to serpens, which it resembles in its distant sparingly-branched branches, but it may be readily recognized by its paler color, and elongated, whip-like shoots, with the leaves growing gradually smaller and laxer upon them to the end. Both this and serpens grow freely, but the fruit is only produced rather sparingly.

S. SERPENS, Spring, Mong. 2, p. 102. A. Braun, Revis. No. 9. Lycopodium serpens, Desv. Enc. Bot. Suppl. 3, p. 553.

A native of the West Inaies, grown under the names of varians, mutabilis and jamaicensis, especially the former—given, no doubt, on account of the peculiarity which it presents of being deeper in color at night than during the middle of the day. It is well marked by the thyrsoid arrangement of its closely adpressed stems. The color is deeper than in the preceding, and the leaves are very different in shape. A closely allied plant, lately received at Kew from Montserrat, is probably S. albo nitens, Spring. The stems are less branched and not so regularly pinnate, the color is paler, and the leaves are ligulate, and placed edge to edge.

S. KRAUSSIANA, A. Braun, Revis. Suppl. 2. Lycopodium Kraussianum, Kunze, Linnæa vol. 18, p. 114. Pappe and Rawson, Syn. Fil. Afric. Aust., p. 50. S. hortensis, Mett. Fil. Hort. Lips. p. 128. A. Braun, Revis. No. 28. J. Smith, Ferns Brit. and For. p. 278.

This is the species most commonly grown in gardens, usually under the name of denticulata, to which it has no right whatever. It is a much larger and laxer plant than the Linnæan species, and the jointed stem and character of the spike furnish good marks of distinction. I have seen wild specimens from the Azores (Guthnick, Watson, Godman, Baron Paiva), Natal (Krauss, 738, Pappe, Gerrard and M'Ken), and Cape Colony, (Uitenhage, Sir F. Grey). and it is reported by Braun from Sicily.

S. GALEOTTEI, Spring, Monog. 2, p. 220. A. Braun, Revis. No. 29. S. Schotti, Hort.

A native of Mexico, with about an equal claim to rank in the decumbent and sub-erect groups

The stem is angular, very pale (straw-colored in the dried plant), and firm, with the articulations very distinctly marked. The leaves are pale green in color, very rigid in texture, with a keel below reaching nearly from the base to the point.

S. AFFINIS, A. Braun, Annales, 1865, p. 296. S. Poppigiana var. guayensis, Spring, Monog. 2, p. 218.

A native of Guiana, nearest Kraussiana, from which it may be known by its more compact habit, deeper green color, and compound level-topped branches. There is another closely-allied decumbent, articulated, South American species in cultivation on the Continent—S. sulcata, Spring, (Lycopodium, Desv.) from Brazil. This has a stem with two deep grooves in front, straighter and less pointed leaves, and is paler in color, with the bunches not corymbose.—J.G.B. in *Gardener's Chronicle.*

HISTORY OF THE PANSY.—A few years ago the Pansy had as many named varieties as the Hyacinth or the Rose. A correspondent of the London *Journal of Horticulture* thus writes of the decay of named forms:

"Although the Pansy has receded before the more fashionable occupants of the parterre of the present day in most places, there are localities where it still retains a respectable place, and these are where our variegated and other Geraniums do not succeed. The moist atmosphere of the North, is more in accordance with the welfare of this plant than it is with that of many of its rivals; and in such situations beds of Pansies present a cheerful appearance.

On the contrary, in dry, sunny districts, with long periods in summer without any rain, this plant falls a victim to mildew, which it is not easy to arrest. Some years ago, I had a tolerably good collection of show varieties of this plant; but one or two hot summers in succession reduced them sadly; so that, eventually, a yellow one, called, I believe, Hon. Mrs. Harcourt, was the last survivor of a long array of names, aristocratic, warlike, and, I fear I must say, vulgar, for the caprice of those who give names to new plants or varieties descends to oddities as well as soars up to celebrities.

Of this, however, it is not my purpose to speak; but, continuing the history of the Pansy, I may say that, at the present day, the number of show varieties falls short of what it was twenty years ago; and I may also add, that the attempted introduction of very dark varieties into the bedding system did not receive much patronage, so that it has been left for another move in the history of the Pansy to again restore it to favor.

THE JOSEPHINE DE MALINES PEAR.—There is a peculiarity in the tree of this charming and excellent Pear, which cannot be too widely known, viz; its perfect and enduring health when grafted on the White-thorn (Cratægus oxycantha); so that any one possessing a good White-thorn hedge may grow abudance of this valuable late Pear, by selecting some clean stems and grafting them, so that the heads of the trees are clear of the hedge.

A tree now growing in a hedge on a hill of gravel close to the town of Hertford, is now some fifteen or more years old, and it seldom fails to give some pecks of fine clean fruit, equal, and sometimes superior, to those from trees on Pear or Quince stocks. My attention was very recently drawn to some trees of this kind, grafted on the White-thorn, and growing in a stiff clay. To my surprise, I found the junction of the graft with the stock scarcely to be distinguished, so perfect is the union. The trees are remarkably clean and healthy, and bear very fine fruit.

Unlike some kinds of Pears when grafted on this stock, the cores of my White-thorn Josephines are not hard, neither is their flesh gritty, but nearly always perfectly melting, and of a rich, perfumed flavor. I have had thirty years' experience of this most distinct variety, and no winter Pear has varied so little in its character, and no late Pear, in my opinion, more deserves extensive culture.

Every farmer, with a healthy "quick hedge," as a White-thorn is called in Essex, should train up some stems and graft them with Josephines; and every industrious cottager should do the same. I fear it will not ripen well north of the Trent, but there are large districts in the warmer parts of England, where it may be made a valuable product.

The only kind of Pear that succeeds well on the White-thorn, for a long term of years, is the Passe Colmar, of which I know a tree some twenty-five years old. But this sort does not, as a rule, ripen well, although it bears abundantly. Josephine de Malines is of the same race. Last season (1866), my fruit of this sort were in perfection all through March and April, 1867. This season they ripened towards the end of December. Such is the subtle influence of climate on the ripening of fruit, about which we, as yet, know so little.—T. RIVERS, in London *Journal of Horticulture.*

MUSHROOMS.—In Italy, and some other continental lands, edible and mushrooms are regularly cultivated. Each autumn there is a mushroom harvest, so to speak; the peasantry eat the fresh fungi, or dry and pickle them for consumption through the year. In England, on the contrary, mushrooms are not eaten at all except by the upper and middle classes. Many varieties which are wholesome and nutritious are wholly neglected; and thus every year enormous quantities of cheap food is suffered to rot in our woods and fields. The loss is all the more important that the kind of food supplied by the edible fungi is precisely that which is most required by working England, and that, also, which is becoming daily dearer and dearer.

In mushrooms, we have a form of food which is principally nitrogenous, or flesh forming, and which is at the same time easily digestible, agreeable to the palate, and cheap. Between two and three thousand species of funfii are now recognized, and there are about one hundred genera. Of these, as is well known, only one species, the *agaricus compestris*, is commonly eaten, though the champignon (*agaricus pratensis*)and the truffle (*tuber cibarium*) are also recognized edibles. But as a matter of fact by far the larger number of species are safe articles of food, and a considerable proportion are very agreeable to the palate. In China, India, and Africa, mushrooms have for a long time been consumed in very large quantities, and more recently many species have been used on the continent of Europe. In Italy, as we have stated, mushrooms are regularly cultivated, one layer succeeding another, so as to afford a constant supply.

We need hardly point out the fact that, when mushrooms are regularly cultivated in this way, all danger that poisonous fungi might be mistaken for wholesome varieties is avoided. It would be as likely that by some accident one of the poisonous varieties of the vegetable family to which the potato belong should be cultivated in our English fields by mistake for the wholesome varieties, as that poisonous mushrooms should make their appearance among the products of the Italian mushrooms beds. But, in reality, even wild mushrooms, the poisonous sorts form but a mall minority. They may also be readly distinguished by their appearance, their offensive smell, and their bitter, astringent, or styptic taste. If persons who gather mushrooms follow the simple plan of avoiding all those which grow in caverns and subterranean places, or on putrefying animal matter, or which have any unpleasantness either of odor or flavor, there is absolutely no danger whatever that unwholesome varieties will be made use of. One other circumstance must also be mentioned. Even wholesome mushrooms will become unfit for food if not eaten fresh, or carefully dried and pickled while still in that condition. Mushrooms should in fact be treated much as flesh would be. They closely resemble flesh in taste and odor, and they putrefy like flesh, only much more quickly.

We are led to make these remarks by noticing that in one part of Great Britain the sale of mushrooms has become a recognized part of the operations of the year. Near Whitland, Carmarthenshire, mushrooms are gathered in the fields during summer, and sold in the neighboring towns, thus forming a considerable addition to the means of the peasantry. This year, owing to the heavy rains which followed a long continued drought, the mushroom harvest has been so considerable that the fields have been crowded with men, women and children employed in gathering the common edible species. Shopmen are giving 3d. and 4d. for every four-pound weight, and sending them by rail to every part of England. Yet the working classes of England would reject with derision the notion of making mushrooms a regular article of their own food, though those which they gather for a moderate price, and numberless other species which they leave to rot on the field, would serve to supply their tables with food at once more nutritious, more agreeable to the palate, and cheaper than any which their means at present enable them to procure.—*London Daily News.*

THE GRASSES.—Much fun was made a few years ago at the expense of a celebrated official under the United States government, because in speaking of clover, he failed to distinguish between a *grass* and *a forage plant*, the following from the London *Cottage Gardener* is the latest phase of this "grassey" question.

The Rev. S. R. Hole contributes a note on the state of the unscientific mind on the subject of graminology. At the Oundle Society's Horticultural Exhibition there was a competition by cottagers in wild flowers and grasses. In one bunch of grasses occurred a tuft of *asparagus*. The exhibitor, a poor woman of the humblest order of intelligence, was *reasoned with* on the impropriety of presenting an alliance of the lilies, &c., and she quickly cut the matter short by saying, "These are grasses, all of 'em; and that is the sparrow-grass." Of course there was an end of the matter.

HORTICULTURAL NOTICES.

HORTICULTURAL MATTERS AT THE PENNSYLVANIA STATE FAIR AT HARRISBURG.

As a general rule, one does, not expect to find much in the way of Horticulture at an Agricultural State Fair for, although the schedule presents some very tempting offers —in the shape of premiums—it is so well understood among gardeners and nurserymen, that the men appointed to serve on the committees know little or nothing of fruits or flowers, beyond the mere fact of their looking nice or tasting well. And the result is just as might be expected, the sensible gardener knowing this, keeps aloof from such like places, while the poor grower with inferior stock steps in and carries off the prize.

So that, after all, the premiums awarded are not surely a fair index of the merits of the article exhibited. But as the officers of the Pennsylvania Horticultural Society neglected to notify its members of their intention to give an Autumnal Exhibition, I thought it just possible, that the gardeners of Harrisburg, might be out in force. So with thousands of others, I wended my way along the banks of the Susquehanna to the great State Fair of Pennsylvania. Nor was I disappointed, for the display of fruits and flowers was very creditable to the city of Harrisburg.

That which above all things, distinguished the fruit department, was the table of foreign grapes, exhibited by F. O'Keeffe, gardener to J. D. Cameron; there were some ninety bunches in all, consisting chiefly of Black Hamburg. Those grown in the cold grapery were very finely colored. One peculiarity in this collection was the great numbers of double bunches, the Black Hamburg, White Frontignac, White Nice, Muscat of Alexandria, Gros Colman and Muscat of Hamburg, had each one or more double bunches.

Mr. O'Keeffe exhibited a specimen of grape training in the shape of a piece of one year old cane, about ten feet long and three quarters of an inch in diameter, with twenty large bunches of Black Hamburgs hanging on it, five of which were double. The vine from which this cane was cut, had in all some sixty bunches of grapes on the present season. The Gros Colman in this collection was very large and fine, also the Muscat of Alexandria; it is seldom one sees such large bunches of this grape on account of its habit of setting badly. The committee awarded a premium of five dollars to this table for the best collection, this fact alone will give you an insight as to the competency of the committee in such matters.

The next great feature of this department was the table of preserved fruit in glass jars, exhibi- by Mr. J. Atherley, agent for Mr. Rowley, 509 Market St., Philada. Next to growing a fine fruit is the pleasure we derive in being able to preserve it. Mr. Atherley seems to possess that secret to perfection. I observed a jar of Duchess Pears in this collection, preserved whole; until now I had supposed it next to impossible to preserve fruit without paring them; this jar of Duchess would indicate that the problem is solved. A dish of fruit, marked "Pound Pears," were very fine. This I should hardly consider a proper name for a Pear, seeing as we have many varieties of Pear that will weigh one pound or more.

W. Hummel had five Louise Bonne de Jersey Pears, marked as weighing, one eleven oz., one nine oz., and three eight ounces each.

The display of Apples by the Lycoming County Agricultural Society were very fine, but as these were not the production of any one individual, it was hardly the thing to allow them to compete.

Mr. J. Kepple of Harrisburg, exhibited a table of native grapes embracing some sixteen varieties. Roger's Hybrid, No. 19, and No. 34, were particularly fine. The Catawbas in his collection were the finest I have ever seen, so fine indeed that a dish of the celebrated "Iona" appeared quite common place alongside of them. In this lot I noticed the Maxatawney and Rebecca. neither of them anything extra. A dish of Allen's Hybrid a white grape, was very beautiful, resembling more a Chasselasde Fontainebleau than a native. I afterwards learned this grape, with several other varieties in this collection, were not grown by the exhibitor. It is usually the rule in most Societies, to demand that the articles should be *grown* by the exhibitor, which seems but fair.

Thos. Oliver, gardener to Gen. Cameron, exhibited six bunches of foreign grapes, marked, Black Prolific, quite small in bunch and berry, but jet black in color; one bunch of White Buel, Muscat, Tottenham Park, Gros Gromier du Cantel, identical with Gros Colman, as exhibited by Mr. O'Keeffe; a bunch of Black Hamburg and one other variety.

The Pumpkins in this department were quite a feature, the largest I noticed was marked one hundred and forty pounds. The potato growers were out in force. "Early Rose" by Geo. M. Rupp, Cumberland Co., looked very promising. Of all the potatoes shown, including some twenty kinds, the "*White Mercer*" was pronounced the finest and fairest potato exhibited. From this department I made my way to the floral tent, and what your correspondent there saw and heard will be given in my next.

[Our correspondents criticism, are *just*, but not tinctured with that *mercy* which he would have if he had had our experience in "getting up" fairs. No one knows how hard it is, to get the "good judges" our correspondent would like to see; but those who have tried Executive Committees have to do the best they can. If good exhibitors stay away because of probable slights, good judges stay away for similar reasons. We never knew a judge, however impartial and competent, who was not abused. In the present case, we have no doubt the officers did the best they could to get the best judges, and that the judges did the best they honestly could. If we were exhibitors under such circumstances, hurt though we might be by the judgment, we should construe it charitably, and say nothing. Fairs are not so much for personal interest as for public information, and he who contributes to them, should feel that in all probability his aid, useful as it is to the general good, may possibly be at some sacrifice to himself.

With regard to the Pennsylvania Horticultural Society, there have been annual exhibitions in September every year, for over a quarter of a century. The day was fixed a year ago, and printed on the schedules, which have laid on the societies tables every monthly meeting night since then. It is hard to understand what other notification would be necessary. Perhaps the "officers of the Society" might in their turn complain that "members" took so little interest in the Society, as never to honor it with their presence, even to know what is going on.

We do not offer these suggestions because we think our friend's strictures are not just, but because our experience in such cases, makes us feel a very large charity for all faults and shortcomings. These fairs and exhibitions are of immense value to the community. Those who give their time as officers, judges, exhibitors, and so on, are amongst the best of public benefactors; and many a time when we feel like scolding at their blundering, the glory of their deeds, seems to plead with us to be as merciful as possible.—ED.]

LAKE SHORE GRAPE CULTURE.

The summer meeting of the Lake Shore Grape Grower's Association on the 25th and 26th of August, was devoted to the inspection of vineyards in the vicinity of Collamer, on the east side of Cleveland, and at Dover Bay, and Avon Point on the west side. The attendance was quite large, the weather fine, and all were delighted with the excursion and pic-nic entertainments, as well as with the extent and fine appearance of the vineyards.

At Collamer, the first day, the assemblage commenced at the residence of Dr. J. W. Dunham, the President of the Association. In his immediate vicinity are more than one hundred acres in vineyard, about half nicely in bearing, nearly all of the Catawba variety, and located on an elevated slope of clay land, two or three miles from the lake. One of Dr. Dunham's vineyards, and two others in the vicinity, have been in bearing for seven or eight years, and in all that time have never failed of ripening a good crop of fruit, with the exception of one season. The younger vineyards bid fair to be even more successful than the old ones. Some of these are composed partly of Concord, Delaware, Iona, and other varieties, besides the Catawba, mostly bearing fruit for the first time, and all looking remarkably fine; though so long as the Catawba continues to succeed so well in this section, there is little disposition to plant other varieties.

Towards evening an excellent supper was provided by the ladies of Collamer in the grove of the Academy, where the host of visitors were most bountifully and pleasantly entertained. After which an hour or so was devoted to speeches and reports of the condition and prospects of the grape crop in different sections of the country. Very favorable reports were given from all parts of the shore district, excepting the vicinity of Sandusky and on the island, where a singular attack of mildew or rot, in the month of July, caused the destruction of the greater part of the Catawba fruit; but the disease soon ceased, and a portion of the berries on most of the bunches remained uninjured, and now promise to ripen well, so as to be good for wine, though not fit for marketing. Favorable reports were also given respecting the crop in many of the interior portions of

Ohio, and in several of the more western States, also in western Pennsylvania and central and western New York.

All varieties of grapes were promising so well that there was little chance for comparison in regard to health and productiveness, but when the fruit ripens, their respective merits will be fairly canvassed, and as many new varieties are bearing considerable fruit this year, the fall exhibition will be very interesting.

Remarks were made on the subject of pruning and trimming the vines, showing that the growing sentiment is averse to such severe treatment as is recommended in the books and practiced by the older class of vine growers; though Dr. Dunham and some others who have long followed pretty nearly the old system, can very safely challenge any of the advocates of long pruning and no trimming to a comparison of results.

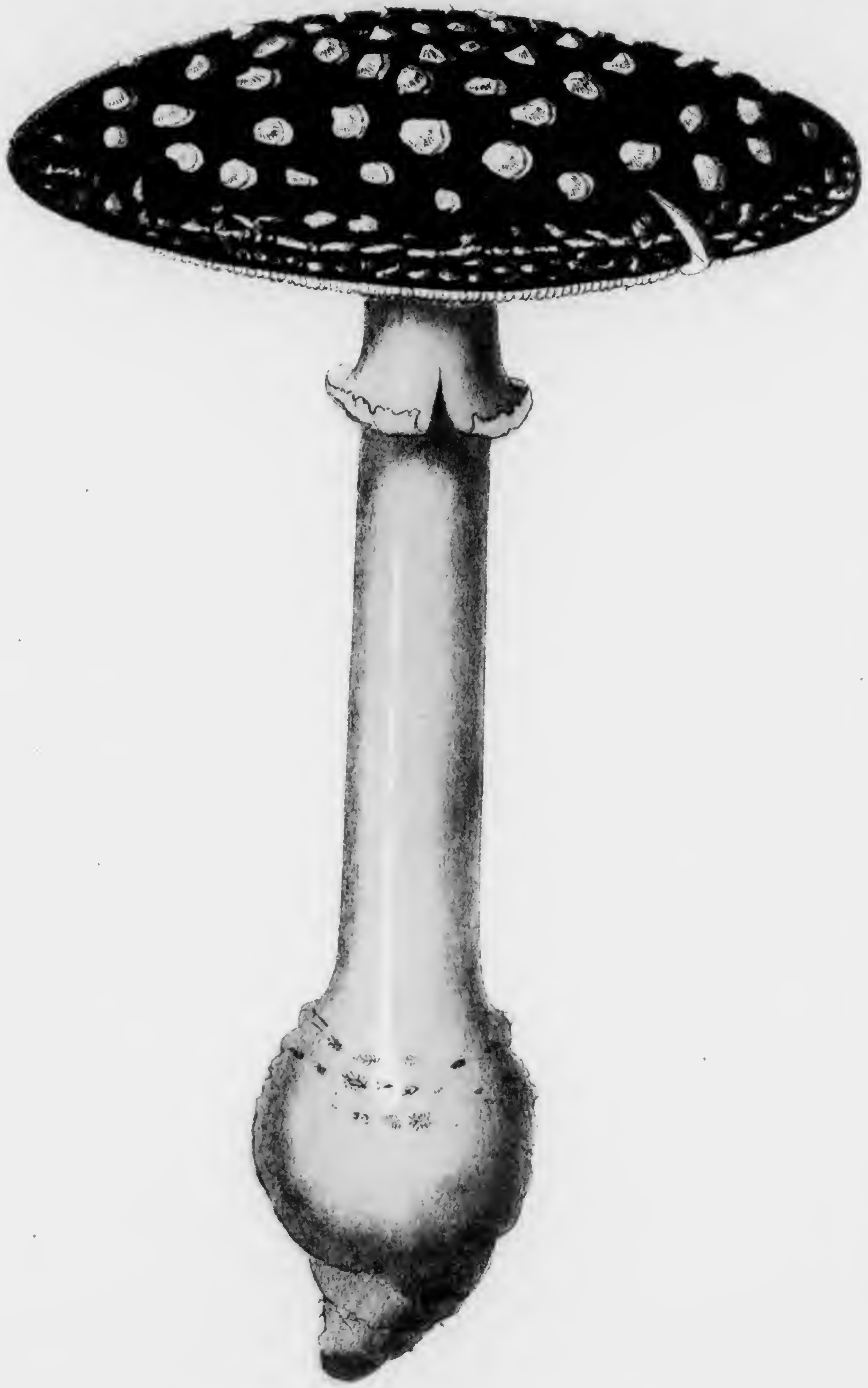
Some of the visitors expressed the belief that many of the vineyards in the vicinity were bearing too much fruit, and that overbearing was a frequent cause of sickly vines and imperfect fruit in all parts of the country. This was admitted as a general rule, in its application to most localities, but it was claimed for Collamer Ridge, that the vines there are able to endure what might be termed over cropping for many successive years without much if any apparent injury.

At Dover Bay, ten miles west of Cleveland, are the vineyards (65 acres) of the Dover Bay Company; located directly on the lake shore, the soil a very compact clay, nearly level, but thoroughly under-drained, and elevated nearly one hundred feet above the water of the lake. The vines were mostly planted two and three years ago last spring, the older ones bearing their second crop, and showing remarkable vigor and fruitfulness—the varieties Catawba, Delaware, Clinton, Concord, Ives, and a few others, alike doing finely, only some injury by thrip to the foliage of Delaware and Clinton. (This insect was also found quite abundant at Avon Point and upon the island.) The little poineer vineyard of Mr. Atwell, near Dover Bay, consisting mostly of Catawba and Isabella, five or six years in bearing, was found in fine condition and bearing another good crop. The stockholders of the Dover Bay Grape Company, are mostly professional and business men of the city of Cleveland.

Avon Point is six miles farther west—the soil similar to that of Dover Bay, and the vineyards of the same character, comprising about 250 acres in the vicinity, the greater part owned and managed by five or six business men of Elyria, which place is 12 miles distant. Most of the vineyards are owned and managed separately, though one hundred acres were planted by one man, Mr. Boyd, for himself and several capitalists of New York, and portions of this have been sold and divided off to their several owners. Nearly all are exclusively of the Catawba variety, and just coming into bearing—some bearing the second crop—and all showing excellent culture and remarkable uniformity, health, and productiveness of the vines, though to a stranger the soil has a most barren and forbidding appearance; and as one of the owners remarked in a speech after the dinner, if the land was not good for grapes, that Lord only knew what it was good for, as no crop would grow on it until it was under-drained and planted with vines.

A very bountiful repast was provided for the company of several hundred persons, in a fine grove, by the citizens of Elyria, assisted by the residents of the vicinity, at the close of which quite a number of brief speeches were made, and a good social time was enjoyed by all. Towards evening the people dispersed towards Cleveland or their several homes. A small party, comprised of the President of the association and several friends, went to Elyria by way of the lake shore, visiting the large young vineyard of Gen. Gillmore and brother, at Black River. This is composed largely of Iona and Delaware varieties, in the second and third year, and some of the vines showing very handsome fruit, the bunches of Iona especially, remarkably compact and well formed.

A party of fifteen made an excursion to Sandusky and the islands, spending one day at Kelley's and the next at Put-in Bay island. They found the vineyards looking well as to health of the vines, but the Catawba crop, as had been reported, a very meagre one; though what fruit remained was likely to ripen well. The Delaware variety had wholly escaped injury, and was bearing a very full crop; the Isabella, Concord, and Ives, of which but few are grown there, were all showing more fruit than Catawba, though not a full crop. As the disease which injured the Catawba fruit this year was different from any that has heretofore appeared in that region, the vineyardists are in hopes that it was occasioned by some unusual condition of the weather, which may not often occur hereafter.—*Correspondent.*



AGARICUS MUSCARIUS

A POISONOUS SPECIES,

See description page 369.

Engraved expressly for the Gardener's Monthly

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COLOR PHOTO

The Gardener's Monthly.

DEVOTED TO

Horticulture, Arboriculture, Botany and Rural Affairs.

EDITED BY THOMAS MEEHAN.

Old Series, Vol. X. *DECEMBER, 1868.* *New Series. Vol. I.* *No. 12.*

HINTS FOR DECEMBER.

FLOWER GARDEN AND PLEASURE GROUND.

This is an age of philosophy. Anything can be proved to be true by it. At least it often seems so. We once thought the world was full of evils; but now we are to believe that evil is a blessing in disguise,—a sort of educator, teaching by the pain and unhappiness it brings, the advantage of the better way. Besides, they say the unhappy are not unhappy. They enjoy sensations, at times, which those whose lot is smooth never know. That is their compensation—the balance which nature generally takes care to pay.

Now this may be all true or not. Our only business with it is as it affects gardening; for while we are feeling delicious sensations at this delightful November weather, we began to pity the far northerners, who were already fast closed in the icy hands of winter. They ought to come and live in Pennsylvania, thought we. But when we looked into the hearts of our Alabama and Florida readers, and read there the same thoughts of us, as we have given vent to; saw how they sympathized with Pennsylvanians, and wondered why they also did not emigrate; we could not but see that philosophy was right.

So let the Nomadic Gypsie live in woods and tents, the Indian in his wigwam, the Esquimaux in his ice buried cell. Speaking for ourselves, at least we dont want to change our lot. We cannot have the oranges and bananas of Florida; but our parrot chats as gaily, the canary sings as sweetly, our greenhouse blooms as profusely, as if we enjoyed them there. Nay, more so, we think; for we value all things more in proportion, to the difficulty of obtaining them.

So we draw on our waterproof, and go out into our garden, to see what is to be done, regardless of northern snows, or southern rains, and find plenty to occupy ourselves every where throughout the land.

Pruning and thinning is in order everywhere. Notwithstanding the many papers that have been written "on the philosophy of pruning," the naked question, "What is the best time to prune trees?" is one with which the gardener is continually bored. The keen-edged gardeners give the cutting reply, "any time when your knife is sharp;" but the more good natured say, "It depends on what you want to cut for." The street cutter "wants to keep the tree head low," and "cuts down to make them branch lower;" cutting in winter does not have this effect, so that unless one has some other object to combine with it, such as to clean the tree of bark scales or the larva of other insects, or the giving of employment to some half-starved tree carpenter, the work might as well be left undone. If you want a branch to push strongly at the point where you cut a part away, *prune in winter.* If your tree has branches crossing each other, or has half dead branches, or any thing tending to spoil the form or symmetry of your tree, prune in winter; but as a rule the less pruning is done, the healthier will be your trees, for it may be accepted as a rule in gardening, that all pruning, whether in winter or summer, is a blow struck at the vitality of the plant.

Those who have already had their places well planted, so as to have some immediate effect from planting, as well as shelter, will have plenty to do at this season, thinning and pruning. Trees should not be allowed to grow thickly into each other. One fat, bushy specimen is worth a score of miserable, lean, thin things. In pruning trees or shrubs into close quarters, follow no Procustean rule, but study the habit of each variety, and trim to suit the various forms. Where this form cannot be maintained without injury to some other tree, better cut it away altogether. Nothing annoys a man of taste more than to see a laborer going the rounds in winter with a hedging-shears, "trimming" each bush into a round, close bunch, like a goat-cropped bush on a mountain side; which are pretty enough once in a while, but monstrous when the rule.

Thinning is not near enough practised. We often hear people complain that their trees were originally planted too thick. This is rarely the case. The warmth of thick planting makes all grow faster; and besides who wants to look at a skeleton of a place for a dozen years, while the fleshy branches are growing over it. The true philosophy is to plant thick, and thin annually.

No man can be a good gardener, without the power of foresight and forethought. This is particularly a great advantage of the winter season, that we are induced to look ahead and prepare for spring,—manures, stakes, labels, tools, gravel, soils, seeds, trellises, grafts,—no one need be without a plenty to do, if proper judgment has been exercised in the matter before hand.

In the Southern States, more active operations will be going on, preparing for spring work.

One of the heaviest expenses is usually the care of a large lawn; but the horse lawn mower, saves a great amount of manual labor. It should be used about every ten days, and the grass suffered to decay where it falls, as practiced by Mr. Sargent. Many are deterred from using it by fear that much expense has to be endured in making a large lawn perfectly smooth, so that the machine can work. But it need not be broken up. Fine soil hauled on through the winter or early spring, and spread over the surface so as to fill up the inequalities, and then heavily rolled in spring, will do as well. A little grass seed may be thrown over before rolling; but even this is unnecessary, as the natural grass will soon come through. Unless the surface soil is very shallow,—so much so as to dry out in summer time,—many lawns may be better made by this simple process than by breaking it up. As it is, the tough sod has crowded out the annual weeds; but when we break up old ground, the seeds of Ragweed, and other pernicious plants, germinate in the new ground, and give no end of trouble before a good lawn is obtained. The surface soil of a lawn, however, should be deep, or it will soon dry out in summer, and the lawn lose that fresh green, which is the most desirable in the dryest times.

PLANT HOUSES.

We recorded recently, the death of Nathaniel Ward, the inventor of plant growing in closely glazed cases. He found that plants would live a long time in these cases, in perfect health, but they would not grow. Very elaborate explanations, have been from time to time published as to the reasons; but we do not know that anything more is necessary than the simple theory which has once before been mentioned in the Editorial columns of the *Monthly*. It is this:—most of the food of plants comes from the soil. It is taken up with the moisture, through the roots. After performing the office of conductor of food, the waste water *evaporates*, and a new supply follows, and new food with it. It is clear from this, if there be no evaporation, there can be no food taken in; and, though the plant lives, it cannot grow. Therefore in a closely glazed case, where there is no evaporation, there can be no growth. When the *Gardener's Monthly* first gave this explanation, it was *pooh pooh'd* by some of our contemporaries, because it was not found in learned treatises "in the books." But it is so simple a thing, that this explanation must be true, that we wonder any one should want to look up "an authority," before believing in it.

It is very important, however, to recognize this principle in winter plant growing. Those who make their houses so tight that heat cannot get out, thereby keeping moisture in, and stopping evaporation, cannot make winter flowers grow fast. Years ago the advice in winter was very common, "put open the ventilators every fine day, to let in the fresh air;" modern gardeners, knowing that if there is "air" enough for a man to live, there is air enough for a plant, do not give near the "air" they used to do, and plants do not grow so well. But the fact is, it was letting *out the moisture*, which the opening of sashes effected, and did the good, which is lost by the modern close keeping practices. We therefore say, as our forefathers said, give air on every favorable opportunity, even though you lose a little heat thereby.

A conservatory requires rather a higher temperature than a mere greenhouse. In the one, flowers in bloom is a chief object; to keep them well over the winter is more the point with the latter.—Plants will not grow and flower under 55°, but the temperature should not be allowed to go above 60°. In very cold nights, when there is a strong fire heat, the temperature may be lower. Hanging baskets, which are now so generally employed for room, cabinet, and conservatory decorations, frequently have their plants injured by getting too dry. It is a good practice to give

them occasionally a dip for a few minutes entirely under water. Ferns and lycopodiums, also very popular, do best in the most humid part of the house. If in a room or place where the atmosphere is very dry, no success can be expected unless a glass case be kept for most part of the time over them.

Mildew often makes its appearance at this season in plant houses, especially on young and the tender leaves of the roses that are kept growing for their winter flowers. Practical men are not yet agreed on the causes of mildew, but on one point there is but one opinion, namely, that mildew will not attack a perfectly healthy plant, as certainly as it will an unhealthy one. A good way to treat a mildewed plant, will therefore be to place it at once in the situation we can best command for a combination of healthy circumstances. The plant may have been partially crowded by others; set it by itself, where it can have a good circulation of air all around it. It is perhaps near the door, where it is subjected to frequent and sudden changes; or near the fire, where it was rapidly dry and moist by turns; or in partial shade, that induced defective growth; all this should be remedied. In desperate cases sulphur water proves an excellent remedy. Flour of sulphur is mixed with water and syringed over the plants. Dry sulphur peppered through a sandbox, would do as well, if the plant is syringed first—the water is not to "dissolve" the sulphur, but to make it stick to the leaves. When sulphur is used in this way it is important to success that the house be kept very warm for a short time, as it is the sulphurous fumes given off that does the work of death. Of course sulphur must not be suffered to ignite, or the sulphurous acid becomes sulphuric, and the plants as well as insects suffer. Constant cleanliness is important to healthy plant growth. Air should be freely given whenever the external air and that of the plant house is about the same, at other times it is dangerous.

A few nice plants will always be more satisfactory than a mass of crowded skeletons. Such plants as pelargoniums, calceolarias, cinerarias, &c., when properly treated, make such plump and happy looking objects, that the owners of such would not exchange them for a houseful of the pictures of misery so often exhibited. The secret is to keep them growing as much as possible, as near the direct light as possible and as bushily as possible. As the pots become filled with roots, they are carefully shifted into pots a size larger, and when these are filled, again repotted into others, until a few weeks before their time of flowering. A thoroughly practical hand will keep them in very small pots, making up the loss of nutriment by applications of manure water, and carefully watching the signs of dryness in the soil, for the exact moment when to apply; but our remarks are not intended for the educated gardener, but for those to whom a little knowledge often proves a dangerous thing. The bushiness of a specimen is made by pinching off the strong leading shoots, and training the weaker unstopped ones out to the edge of the pot. This used to be accomplished by a bundle of stakes, making the plant look as uncomfortable as an old time drunkard in the pillory—the modern plan is to fix a band of twisted bast matting around the rim of the pot, and from this lead light invisible strings to any desired part of the plant.

COMMUNICATIONS.

ORNAMENTAL PLANTING OF PUBLIC AND PRIVATE GROUNDS.

BY MR. ROBERT MORRIS COPELAND.

Read before Pa. Horticultural Society Oct. 6th, '68.

Whilst we admit the value of variety in everything connected with human wants—in dress, food, houses and amusements—we seem to be nearly indifferent to it in our public grounds, both in the city and the country.

The sanitary value of Parks and pleasure grounds, is widely recognized, and many advocate their creation as places of amusement, with very little knowledge of how the space devoted to public grounds may be made most serviceable for the purposes they are intended to subserve.

Nothing in Nature is more beautiful than grass and trees; and even when the grass and trees are only the dusty strip by a public road, or the pollard willows of a meadow dyke, the eye loves to linger on them.

The citizen, confined for six days to the office or workshop, on his half-holiday or Sunday, strolls with entire contentment down the walks of a city square, under trees whose principal merit is the shade they give—looks at or lies on the grass, and lets his children play about, is quite satisfied and enjoys what he sees, ignorant of, and therefore indifferent to any thing better which might have been created out of the same spot.

When we see that every city square and village common is the fac simile of every other, in stiffness and meagreness of detail and treatment, we are half persuaded that nothing different would answer, or else it would be created. Though the same trees are used over and over again, few are critical, because they do not know the difference in trees, or what will grow in cities. Whoever is familiar with the trees and shrubs which abound in this country, and has ever studied the formation of natural groups, must have admired their irregularity and variety of form. Why then, when we imitate Nature, or try to introduce her works into the regions inhabited by men, must we neglect the obvious lessons Nature gives? A difficulty in discussing this subject arises from the want of a suitable and descriptive name for the plots of ground which are commonly devoted to Public use.

These spaces are sometimes many hundred acres in extent; but the majority are less than a quarter of an acre, and for want of a proper name all are called "Squares," whether round or oval, or quadrilateral; or "Parks," whether they are the handful of land that fills the centre of the city court, village green, or a Central Park.

I shall not consider the large areas, like the Central, or Fairmount Parks—such spaces demand strong and well conceived treatment, and will by their extent of surface and the character of their surroundings, compel even the most unlearned and indifferent person to plan for variety, and perhaps grandeur.

The largest areas devoted to Public uses not especially Parks, are our Rural Cemeteries, which being extensive and picturesquely located, generally serve the double purpose of graveyard and Park to the communities in which they are situated. Necessity requires that the most shall be made of the land; and in order that they may be profitable and attractive, the owners try to suit the Public taste, by such management of paths, avenues, and the plantation of trees, shrubs, and flowers, as will give variety and interest.

The idea of the Rural Cemetery, where we may sleep under the grass, flowers, and shady trees, and be surrounded by pleasant objects which may leave an agreeable impression on the minds of our bereaved friends, is extremely attractive.

If they were carefully laid out and well planted and managed, it would be easy to satisfy the actual necessities of the community, and yet retain all the quiet and repose that would soothe and please the bereaved mind; but instead of simplicity and rural beauty, most cemeteries become in time places where the pomp and show of mourning may have full development, and the ostentations of pride and wealth gild the grave itself.

It is painful to see how the desire to surpass one's neighbors' has vitiated the original desire for simple, rural graveyards; where beauty of landscape, trees, and flowers may combine, as much as possible, to remove the gloom which must ever accompany death.

The land for a cemetery is generally well selected in some naturally pretty place, where either the landscape is attractive, the surface picturesque, or well shaded by trees. Avenues and paths, if they follow the natural line of grade, do not detract from the simplicity of the surface; but if carried with no regard to the natural indications, wherever it suits the fancy of the owners, break the surface badly, and it often requires a great deal of change and cost to produce something not as good as the original.

Badly located roads and paths are a slight evil, when compared to the usual way of making lots. Instead of leaving each lot at the natural grade, all are brought to a dead level, producing the harshest contrast to the rest of the ground; one lot being depressed and graded, the others must harmonize, and the whole area is broken into a series of small, awkward, stiff terraces.

When graded, the lots are surrounded by a hedge, an iron fence, or a granite curb stone,—either boundary being costly and cumbersome; and soon the whole place is divided in to a series of small enclosures, from which the spirit of the rural graveyard has departed, and is replaced by a show of what the Gardener, Iron Master, and Stone-Cutter can do to deface nature. Every vestige of simplicity is lost, and we have ugly forms and combinations, which men consider to be suitable for a burial place instead. Better be wrapped in a blanket, and laid in the corner of some country graveyard, where a few old Elms may wave, and Wild Grass, Asters, and Golden

Rod, nod over our dust; than be smothered in brick and marble vaults in one of these showy, costly cemeteries. The sadness and terror of death ought to banish bad taste and purse pride from the graveyard, rather than give fresh chance for their exhibition.

If you wish to realize the true beauty and possibility of a Rural Cemetery, select a suitable spot, remarkable for its picturesque or beautiful surface, or for its fine trees and shrubs, or view. Then lay it out naturally, the paths and avenues going where the line of ascent is easiest; make the lots at the natural grade of the surface; permit no fences, and mark proprietorship by low corner stones; and plant the trees and shrubs according to some general plan for producing an effect.

Let the owners of the lots have neither power nor right to meddle with the standing trees or shrubs, or to plant any thing unless it be flowers. With this treatment we can in time create a Cemetery which will give entire satisfaction to every tasteful visitor.

Men talk of the equality of the grave, and yet belie their words whenever the chance offers. No poor man can venture to think of having a lot for his family in any fashionable Cemetery.

The land, costing at first from fifty to a hundred dollars per acre, will rise to several hundred dollars per lot of twenty feet by twenty, by the time the superintendent of the Cemetery, the Iron Master or the Stone Cutter makes it ready for occupation. The earnings in a year will not pay for the home of the dead, and the poor man must either go without a family burial place, or else deprive the living of comforts and perhaps necessities, if he would escape the stigma of neglecting to treat his dead as well as his neighbors. None can easily endure such an accusation; better stint and starve the living than seem untrue to those whose dear faces can never again look into ours, and whose ears may not hear our reasons for our actions. Many a man finds the rural cemetery, the idea of which was once charming, a burden to his energies.

But, without dwelling further on this part of the subject, let us turn to the little plots of land called parks, squares, crescents, greens, &c., which are properly the public grounds of cities and towns.

The receipt for making such parks is simple. Buy a lot of land; then carry a path or road around its exterior, and plant beside the path, at intervals of twenty or thirty feet, Elms, Maples, or Lindens. Carry another path around the interior, quite near the fence, and plant both sides with the same kind of trees. Then, to accommodate the lazy and shiftless, make one or more paths diagonally across the grounds as cut-offs, which will easily and quickly connect the opposite sides. The cut-offs will meet in the centre; where strike a circle, put a fountain, a music stand, a flower bed, or erect a flag-staff.

Plant the sides of all these paths as before; and possibly, where two meet, set an extra tree. A Norway Spruce or White Pine in the apex; or, if still more enterprising, give the point up to a group of shrubs. When the paths are made, the walks gravelled, the grass green; place stone or wooden seats at convenient intervals, and set up signs saying, "Keep off the grass." Presto, change! the land has been converted from a waste lot into a Park!

If there was any irregularity of surface, the Engineer-in-chief will, of course, have filled it up, and graded it to a uniform slope, or into terraces; for if the natural lines were left, it would seem to show neglect, or want of appreciation of man's skill or power.

Such places as I have described are familiar to every one, and may be suitable for the so-called lungs of cities—for they do purify the air; but they neither teach, amuse, or stimulate the mind. A person ignorant of the varied beauty of the country, and confined in a workshop all the week, may find great pleasure in the commonest trees, or in shrubs and grass. One who is perfectly familiar with all kinds of natural beauty, may enjoy the grandeur, grace and verdancy of fine specimen trees; and rows of the same kind of trees are interesting for themselves and for their symmetrical arrangement. But why should the enjoyment be limited, when there may be frequent and pleasing changes, both in the kinds of trees, and method of planting?

But to return to the land which is to be improved. There is no reason, in the nature of things, why formality, rectangularity, regular curves, ovals, or ellipses should be taken as the prevailing lines in outline, in paths or plantation. It is only a meagre imagination which suggests them. Public grounds are supposed to be the resort of those who have some leisure at their disposal, and who go there to saunter or while away their time in pleasant scenes. For such visitors, a winding path, which increases the actual length of the walk, whose bends open out on pleasant views,—across lawns into glades in a wood; towards a fountain, or a handsome architectural facade is preferable.

Bends and curves of the path may be planted with groups of trees and shrubs; in which, rising in regular, symmetrical order, or with picturesque irregularity, each tree and shrub will lend to or take some beauty from its neighbor. In such a walk, every step is surrounded with fresh interest ; and, however familiar the view, it never becomes wearisome.

A straight path is more direct, may be well kept, and be bordered with rows of beautiful trees, but its interest is always the same—the perspective may be attractive, the trees noble, but each step treads, as it were, on its predecessor, and the mind finds no stimulus in the variety of the scene. The impatient passenger, who wishes to cross from one side of the grounds to the other, will complain that his road is lengthened, and will be impatient with anything which seems purposely to detain his feet.

Let him complain. The place is not made for a thoroughfare, or a convenience for the marketman and errand boy. It is something to be enjoyed, and where both body and mind may be refreshed. Is there any reason why the true and best interests and uses of such a place should be sacrificed and abased to mere convenience ?

The next mistake which follows bad laying out, is meagreness of material and want of variety in planting. Three-fourths of the trees in our public grounds are Elms, Maples, Lindens, Horse Chestnuts, Norway Spruces, Balsam Firs, and Pines. These all have merits, but are a small portion of the supply which Nature affords. There are not less than one hundred and fifty Deciduous, and thirty varieties of Evergreen trees, without referring to shrubs, which are effective singly or in groups.

When trees are planted in rows, variety is sacrificed to uniformity ; because fewer trees, and of course fewer kinds can be used, where each one must be the same number of feet from a fence, or a path, or another tree, than when they are combined together, and planted at close or irregular intervals, trusting to contrasts in outline and color for good effects.

We have but to summon before our minds the different shapes of the Elm, Maple, Oak and Birch, Locust and Acacia, in Deciduous trees—the Pines, Hemlocks and Spruces amongst Evergreens, to see how readily contrasts and harmonies of shape may be produced.

Trees differ so much in color of leaves, that even the summer landscape may be greatly diversified by grouping them ; whilst their changing foliage in Autumn,gives the planter as ample opportunities for compositions and good effects, as the painter has with the colors he lays on his pallet.

There are many persons who understand the power and value of different trees, and use a variety of them in planting ; but most of them stop with the trees, and never know, or care to learn, how much can be done with shrubs—which, besides their foliage, blossom in different parts of the season. Shrubs have more social beauty and interest than trees, which, high and distant, seem to protect humanity ; whilst the shrubs nestle in the corners, and meet us on our own level, with their extended branches laden with flowers. We may prune and train a shrub, gather its blossoms, and, as it were, make it a pet, and so never lose our interest in it.

The different sizes give the planter many advantages in grouping. He may have twenty where one tree would stand, and of this group of twenty some will always be in bloom ; and when the flowering season is past, their leaves or their berries will replace the flowers. Many small plots of public grounds which give room for but few trees, when the trees are planted, soon become over-shadowed, damp and grassless, which if decorated with shrubs, would be warm, open, dry and green, and would gladden the eye every time they were approached.

What if there is no shade at noonday ! Noonday is rarely the time any one selects for a stroll —the early morning and the evening would find the alleys shaded and fragrant, and the slanting rays of the early and late sun would help the general effect. In treating all small areas, it would be well to throw aside most of the trees, and rely mainly on shrubs for variety and interest. From shrubs, we are led by easy gradation to flowers, whose absence is a disgrace to the general treatment of public grounds.

If the variety and pleasure which trees and shrubs can give were noted by the number 10, we might call flowers 100 ; for, as the number of available shrubs exceeds the number of trees, so flowers are ten times more numerous than both. There are not less than a thousand different flowers, or kinds of flowers, each sufficiently attractive to detain the eye,which might be gathered in great or small numbers, singly or in masses, in public grounds.

Beginning with the bulbs, which may be followed or accompanied by the native wild flowers —which readily accustom themselves to the garden, and fill the gap between bulbs and garden flowers—the spring would be fragrant and gay. The Perennials would blossom before the wild flowers and bulbs had passed, and continue the interest until the myriad of Annuals and the bedding plants of the greenhouse should come with their richness of color, grace of form, and abundant fragrance, to swell the glories of the season.

I might dwell at length on this part of the subject, and recall the names which are familiar to many as household words—names whose mere mention in the depths of winter warms the heart, and instantly summons memories of spring, when the young grass was of the most tender green, and the foliage many tinted—which would recall the glories of June, when to lie on the grass, inhale the fragrance cf the Roses, and watch the white, fleecy clouds sailing in the tender blue of the sky, whilst the breezes gently rustle amongst the trees, is a perfect joy. But to enumerate would be tedious, and might, in spite of the association, give this Essay the character of a catalogue.

Or I might describe the flower beds cut in the grass, or bordered with varied edgings, which stretch over acres of English public grounds—where the richest effects of color are produced by massing hundreds of like plants together.

There is no limit to the beauty which may be produced by bedding, or plunging greenhouse plants in masses; securing rich contrasts of color by using with the flowers, the variegated and colored leaved plants ; but we, as a people, are ignorant of them all. Some enterprising private persons make efforts which are creditable, but nothing is done in America with flowers, which can rival the common practice of English public and private grounds.

When we think what may be done with flowers—how they will combine with grass and blend with the shrubs, we ought to be indignant that the poor and ignorant public should be denied the enjoyment they would furnish. Flowers appeal more quickly to the better part of men's minds than anything else Nature offers. Go with a bunch of common flowers through the lower wards of this City, and a hundred eyes will eagerly watch the beauty you carry in your hands ; and if you stop, men, women and children will surround you to look at it.

If flowers can so pierce the crust of ignorance, poverty and vice, are they not desirable agents for humanizing the populace ? If we are indifferent to the influence flowers may exert over the mind, we ought, at least, to try and make our work compare favorably with the spontaneous bounties of nature.

When we turn from the garden, where we may collect what we like together in a small space, to the woods, fields and hedge rows, what a lesson we may learn. Beginning with Hepaticas and Violets, in the spring, the meadows and roadside are enameled with flowers of splendid color and delicate fragrance, the number increasing as the season advances, until, in Autumn, the whole landscape is golden, purple and white, with Aster, Golden Rod and Eupatorium ; and in some secret nooks, blue with Gentians.

What if the Dandelions, Buttercup and Thistle are weeds. in man's estimation? they are not in Nature's. The flowers which gild the landscape are flowers, not weeds, to Nature ; and count, each one, for as much as the Gladiolus, the Pansy, the Heliotrope or the Tuberose.

Let us ponder these facts, and reform our treatment of the little openings we make in the midst of the haunts of men. Replace the trees which only shade the surface, and thus prevent the growth of flowers, by shrubs and flowers, and by their aid give an interest which can never pall,—which will offer new attractions every hour of every day in the summer, and even when winter comes, will still be beautiful, with the leaves of the Evergreens, and the berries of the Rose Hawthorn, Alder, the Spindle Tree, and the Holly, which are almost as beautiful as flowers to decorate the landscape.

A great objection to planting flowers in public places is, that they will be stolen. This is no real objection ; they would not be stolen if they had no value in the eyes of the thief ; and that they have,is in favor of cultivating them whenever the opportunity is offered If they are not safe without watching, watch them ; but do not let their beauty be the actual reason for denying the gloomy streets and courts of cities and towns the interest they so much need.

To be truly successful in using trees, shrubs and flowers, the planter must study the subject with enthusiasm in his heart, and use his materials with skill. Earth, grass, trees, shrubs, flowers, and laboring men,—crude and rough though they may be in detail,—when well managed, will produce as beautiful results, and be more satisfying to the community, than the most costly and rare pictures, painted by the best masters.

Hitherto, in America, the best floral and landscape gardening effects have been the property and work of private persons, who admit or exclude the public at will. This is wrong ; the public ought to do more in these directions, etc.,than individuals.

It is true that, in America, every man may have a little place of his own ; but, as a country, we are very far behind England in our gardening. To make gardens and pleasure grounds requires a surplus of income. In England the accumulation of wealth and great estates in families, enables men to build and maintain greenhouses and gardens, and continue to add yearly to the beauty of their grounds, and develope new plants.

In many gardens, square rods of the same flowers are used for their color, to produce particular effects—as the Golden or Silver-leaved Geranium, or the colored foliaged plants, all of which have to be wintered under glass to live, but which, when planted in open ground during summer,are wonderfully effective. Such planting can be done only by those whose wealth is so secured, that the owner knows what he does will be permanent. Few men in America are rich enough to indulge such fancies if they have the interest. Wealth easily acquired is fugitive. The wealthy man of this generation may be the pauper of the next. The public is the only permanent aristocrat ; and the public, if conscious of its importance and wants, may equal anything that Europe can afford.

Passing from what the public can and ought to have in the summer, when the sun and earth combine with the wind and rain to give beauty, is there nothing which may fill the void caused in the floral landscape by the frost and snow ?

The rarity of flowers in winter adds to their value. Were there but one Dandelion or Quartz Crystal in the world, it would be priceless,—and just as anything we want or love grows rare, we appreciate it more. All summer we have revelled in our gardens—have watched the dew glistening on the Rosebud or the Pansy, in the morning ; have imbibed the fragrance of the Heliotrope, at noon ; have been delighted with the color of the Tropæolum, Balsam and Aster, Gladiolus and Verbena ; but when the chill winds of Autumn gradually cool the air, and silently check the progress of vegetation—when some unexpected frost nips the tender flowers, our love gushes out anew.

The Heliotrope never was so fragrant, the Coleus never so rich in color, the Tropæolum never so brilliant, as when their days are actually numbered. Then we eagerly hasten to pot a few favorites, hoping, by a starveling life, to perpetuate their power to another year, even if they give us only leaves to look at during the long winter months.

To forestall the dangers of cold and prolong the pleasures of summer, green and hothouses ought to be built by every city, located in some of their public places, to be winter gardens, to which the public might go in cold weather. A well kept greenhouse would have a great humanizing influence on the ignorant and poor. No one can calculate how powerful the effects of such a place would be, unless he recalls the delight he felt in going from the frozen ground, snow or slush, on a bitter winter day, into a warm building full of flowers and foliage; vines clinging to the rafters, spotted with blossoms,--the air rich with that fragrance and dampness that fills one with pleasure, and recall the woods and gardens of summer.

The collection of plants in such houses may be meagre in variety or rarity,—be all Roses, Geraniums, Salvias, Verbenas, or a bed of Violets ; no matter how few the kinds, the contrast is sufficient to delight the mind and eye, and fill a visitor with enthusiasm. Hardly any one is so dead to beauty, so wrapped in business or selfish pursuits, as to be insensible to the pleasure a well-filled greenhouse gives ; and certainly the million would eagerly go to such a place, and get lasting benefit from its influence and teachings.

Such houses, at present, are the property of the rich, (who least of all need them) who may surround themselves with books, statues, paintings, and beauty of all kinds, to fill the void the loss of summer must make. The rich need greenhouses and flowers far less than the poor. We ought to think of this, and the public should provide for its needy children the pleasure and education they can never give themselves.

The least progressive and conservative will object, that such collections will cost too much, and be a great trouble, and require experienced men and wise committees to manage them. The cost, the price, the labor, the trouble, are of no consequence, compared to the probable and possible resultant good ; and when we make parks and squares, we ought to think of this side of the

subject, and see to it that we reserve means and energy enough for winter as well as summer. Such houses could be made nearly self-supporting, and the demand would create the supply of capacity to manage and carry them on.

I have briefly hinted at these possibilities in connection with the subject I have taken for this Essay, hoping that the ideas may find some soil in which they will lodge and grow, until at last, they will produce fruit.

There are many persons, every year, who bequeath money to found hospitals, libraries, churches, and the like ; Missionaries are equipped, and sent out to reclaim the ignorant and vicious of foreign lands. Why is it that no one has ever seen the good which might be done to a growing city, by having, in its midst, some winter garden, where plants of the Temperate and Tropic Zones could grow side by side, and be open to the enjoyment of the people? All the objection which can be made to such a project could easily be removed, and nothing is wanted to ensure success but the money, and the will to design and execute.

I have been obliged to deal generally with this subject, but the limits of a single Essay give no place for minute directions or elaborate argument. I most sincerely hope and believe that,as our country progresses, the Square, Crescent, Village Green, Rural Cemetery and Public Park will be treated by men thoughtfully and with an understanding of the resources of Nature, and the effects which may be produced if we will freely and wisely use that which Nature gives liberally.

To plan and execute public improvements well is no chance work, and cannot be stumbled into, nor can the power be taken up as one would put on a glove. Although Nature is simple in her effects and treatment, it is extremely difficult to to imitate her. Her accidents produce most picturesque and beautiful results,which, reproduced by men, would be hideous deformities.

We are apt to undervalue the common and simple things we see about us in the landscape, which are the effects of chance, and believe that any one who can dig and plant, or survey, can easily create the beautiful. This is a fallacy, which most surely brings the designer and his work to sorrow. The digging, planting and surveying are but bricks, mortar and stone, in the hands of the architect ; the chisel and marble block for the sculptor ; the paint, pallet, brushes and canvass of the painter. Behind the tools and materials lies the artist's mind, which sees, in the bricks, stone and sand, as they lie on the ground, the edifice : who knows that the statue is in the marble block, and only needs to be removed from its overlaying matter to be appreciated—who enjoys the picture on the bare canvass even before the ground color has been laid on.

In a city like this, covering many square miles, there are opportunities for the wise expenditure of money in producing local natural beauty. How many of them will be improved, time will show. But my faith is strong that men will learn (in this art as in all others,) by the mistakes they make. And I believe the time will come when public grounds will be a real beauty and ornament to our cities, and a source of pleasure and development to the people.

PROPAGATING THE EARLY ROSE POTATO, AND PROTECTION.

BY W. C. STRONG, BRIGHTON MASS.

On the 1st of April I started 6 lbs. of this potato, received from B. K. Bliss, dividing the seed in to single eyes, and treating them as we do Dahlias, in a greenhouse. As soon as the shoots were sufficiently grown, say four inches long, cuttings of the tops were taken and placed in a propagating bed, as we treat Verbenas. In a week these were ready to be potted. From these potted plants, cuttings were again taken, this process going on in geometrical progression until the middle of August, when I had over four acres planted. These cuttings did admirably well, producing tubers in a remarkably short space of time.

By a careful test, I found that cuttings taken July 25th, and turned from pots into the open field August 5th, yielded September 16th at the rate of 160 bushels to the acre, as large and as fine tubers as the "pictures" in your *Monthly.* Of course the later cuttings were expected to produce small tubers, and indeed we did not expect full results from any, since the tops were so severely and constantly cut. Yet the yield was most satisfactory. For the interest of this experiment, I regret to add, that when the crop was in full and tender growth, a prolonged and excessive wet season set in, and the Early Rose suffered from rot in common with all other varieties. The season has proved worse for this disease than any other which we have had for many years. My crop was in just the stage to fall an easy prey. I do not like to dwell upon this part of the subject. But yet, when I affirm that I have saved over 80 bushels of sound potatoes, grown in a single season, from six pounds of seed, I may still be allowed to ask, who can beat it?

Noticing your excellent recommendation to cover tender trees and shrubs entirely with earth—in other words to bury them during winter—will you allow me to caution your readers in respect to some exceptions? Trees with firm wood and bark, will bear this treatment in almost any soil. But the Peach will suffer in any but a dry and sandy soil. So also with the Althea, tender Roses, and the shrubs having a similar character of wood. In a dry and sandy soil, almost anything may be buried. If this cannot be had, a covering of shutters which will turn off all the water, will render the method equally safe. No other method is so perfect and so cheap.

PROTECTION OF CABBAGE PLANTS IN WINTER, &C.

BY PETER HENDERSON, S. BERGEN, N. J.

In your reply to a correspondent in the November number, who makes inquiry about keeping cabbage plants in winter, you say that you think they will keep better under boards, than under glass, provided that they are aired occasionally, and that such is the practice of the best Philadelphia market gardeners. All our experience here forces to an opposite belief; for in every case that I have ever seen where the attempt has been made to protect them with boards or shutters, it has entirely failed. It may be that there may be something in your milder climate that favors that practice; but here, and in all parts of the Eastern States, they certainly cannot be kept over winter with safety, in any other way except under sashes.

I well remember my first winter in market gardening, reasoning that as a board would keep out more frost than a sheet of glass, and *then* accepting the current dogma, that it was "the thawing and freezing that injured plants," I covered half of my cabbage and lettuce plants with shutters, and the other half with sashes. Every possible attention was given to air them when opportunity offered; yet with all care as spring opened, we found that all, both of Cabbage and Lettuce that had been covered by the boards were dead or nearly so, while those that had been covered by the sashes had passed through unscathed.

This was the first evidence that I had in practice that led me to believe that it was not the thawing and freezing that killed plants so much as an *uninterrupted freezing*. In the case of such vegetable plants under glass and under boards our theory and practice is this:—In a continuance of severe weather, when the thermometer in the shade may mark but a few degrees above zero, in the day time we frequently have at such times bright sunshine, our practice then is to leave the sashes on the frames, unventilated, so that the sun's rays striking the glass will generate heat sufficient in the frame to thaw out the frost of the night before—night again comes on with a zero temperature, next morning shows the same results—the soil is frozen down to the roots of the plants, the thawing by the sun is again done, and so, often continued for a week at a time. And during the entire winter they are thus frozen and thawed out at least twenty times—yet although there may be twenty thousand sashes used by the market gardeners around New York, in which are grown many millions of plants, yet I think I may safely say that not one per cent of all that is planted is lost by this practice. While with us I do not believe if board shutters were used, that 20 per cent would be saved.

The belief that it is the alternate thawing and freezing that injures plants, is no doubt taken from the fact of plants being thrown out of wet soils, *exposing the roots*, and thus being injured by the alternate action of thawing and freezing. But this is but an accidental condition, the injury in this case being directly to the root. There are other exceptional cases; such as where a continuance of a warm spell has been so long as to *start the sap*, which, succeeded by a severe frost, with the plants in this condition would likely be fatal. I once had a valuable collection of Monthly Roses, growing in a very warm and sheltered spot, that had stood uninjured three winters, but during the fourth a long continued warm spell in February started the buds—*the sap was in motion*, when a frost occurred, bringing the thermometer down to three above zero, which killed every plant down to the roots. Just so it would be in the case of cabbage plants under glass. If the thawing out process was long enough continued to start the plant into growth, the next severe frost would kill it as certain as it would a Geranium, but this we will watch, for if when once thawed out the weather is mild, the sashes are stripped entirely off to prevent growth.

Our belief then is this, that a continued severe freezing without interruption distends the sap

vessels to bursting, and death or injury ensues. Hence our practice is, with all half hardy plants, be they Cabbage plants, Roses, or anything else that have become frozen over night, to submit the glass to the action of the sun's rays as quickly as we can (by increasing if covered) the following morning.

The past winter has given us, I think, many serious proofs that an uninterrupted low temperature is more disastrous to plants than one more variable. During January of 1867 the register of the thermometer taken here at 6 A. M. averaged 18, ranging from zero to 34, in the 31 days; in February the average was 3 degrees lower, ranging from 4 below zero to 28. Is it the result of this continued freezing, that our Evergreens, that had stood uninjured for half a dozen years, were killed by thousands? If not, how are we to account for them passing through unharmed the winter of 1865, when on several occasions the thermometer marked 10 degrees lower, but for short intervals only, being followed by mild spells, or in other words thawing and freezing winter? The winters of Great Britain are of this character, but much milder of course than ours, many things proving hardy there that would not stand through December with us. But in the winters of 1838 and '54, when Jack Frost held unbroken sway, as he did in our past winter, even the native furze and broom of their highways, was in many cases killed, together with many other things that in ordinary years had been classed as hardy.

REMARKS ON "THE LESSON OF THE YEAR."

BY A. FENDLER.

From some of the editorials of the *Gardener's Monthly*, I see that a lively discussion is going on with regard to the manner in which plants generally, and trees in particular, have been killed during the past winter.

No serious opposition to Mr. Meehan's general views, presented in "the lesson of the year," could have arisen, if a few important facts in physics and in vegetable physiology, which deserve to be more generally known, had not been lost sight of by some of its readers.

In the first place, there is no doubt that if in winter the vegetable cells and sap vessels were filled to their full capacity with nothing but water, this water would, by long continued very low temperatures, freeze; and by the force of crystallization burst sap vessels and cells, and kill the plant outright. But facts and physiology teach us, that the young *vitally active* cells, through which the functions of vegetable life and growth are principally carried on, are not filled with mere water, but that they constantly contain assimilated liquid matter, which in winter exists as an elaborated, highly concentrated sap, consisting mainly of mucilage, dextrine and sugar, forming at times a syrup, which in spring is diluted by the moisture of the soil, taken up by the roots, whenever by a genial heat of the weather the process of growth is set in vigorous motion.

That the young life-sustaining cells, thus partially filled with syrupy and mucilaginous matter, cannot be ruptured by the cold of winter in our latitudes, must be evident to any one who has observed what a low degree of temperature it takes to congeal ink that contains a liberal proportion of gum arabic dissolved in it. A bottle two-thirds filled with this kind of ink, I had during winter nights sometimes exposed to a temperature of 12° and 14° above zero. Only twice I found the contents congealed, and even then the bottle was unhurt; whereas I have seen bottles of pure water broken to pieces by temperatures of 28° and 29° above zero.

Young cells may possibly be ruptured if, after vegetation having actively begun and continued its operations for some length of time, and the cells having in consequence been filled with *diluted* sap, an uncommonly severe or protracted frost sets in. Hence, trees sheltered in nooks and corners, so as to allow the full heat of noonday sun to concentrate upon them, and thereby to induce and start into vigorous activity the functions of vegetable life, are not in the safest of places.

On the other hand, I have seen hundreds of young fruit trees saved from being killed by having the protection of a row of buildings against the dry and cutting winds, in a remarkably dry and very cold winter, while thousands of other young trees, that were exposed to the full blast of those winds, died. But then the winter was a steady one, and the protecting buildings formed a straight unbroken line with no nooks and corners.

That the trunks of trees during excessive cold winters do split open, and most frequently with a noise like the report of a pistol, I have witnessed on several occasions. This, however, is not done by the rupturing of young cells, which we know are situated not very far below the bark, but by the older sap-vessels of the interior of the trunk, which no longer contain assimilated matter, yet may at times be filled with mere water, taken up and held mechanically by capillary attraction. Hence, trees may split from top to bottom, and yet continue to live and be healthy. The loud report of the bursting trunk gives proof that the cause of violent action is a deep seated and not a superficial one.

Mr. Meehan, however, discusses why plants die when the sap-vessels do *not* burst. His views that plants can and do die from shrinkage of the cells and sap-vessels, and the causes he assigns for this phenomenon, fully harmonize with known laws and facts in physics, and are not conflicting with any of them.

The minute particles or atoms of water have an inherent natural tendency to spread, and to detach themselves from the free surface of water, no matter whether the water be in a solid, liquid, or in a gaseous state. This is called the tendency of evaporation. The force of this *tendency* is in proportion to the temperature of the water, but the vigour of evaporation itself depends upon many additional circumstances in the atmosphere.

The most simple way to observe the peculiarities of evaporation of water and ice, and at the same time to find the degree of humidity of the atmosphere, is by means of the dry and wet bulb, two thermometers of equal make and shape, having cylindrical instead of globular bulbs ; the wet bulb being covered with a small piece of thin linen cloth tied close around it, to be immersed into a cup of water whenever it may be wanted for observation.

From observations made with these thermometers we learn that at times, especially in a very hot and extremely dry gale, the wet bulb shows a temperature from 23 to 26 degrees lower than the dry bulb. This fact indicates that in evaporation a considerable amount of heat is abstracted from the evaporating body, and, vice versa; whenever there is a reduction of temperature in the wet bulb, lower than that of the dry bulb, we may be sure that there is evaporation going on in the former. In cold weather the water on the wet bulb, of course, congeals, and in about ten minutes after, we generally find the wet bulb to be several degrees lower than the dry bulb, which proves that evaporation is taking heat even from the film of ice.

We also learn, that at times there is not the least difference to be found in the two bulbs, and no reduction of temperature takes place in the wet bulb after its immersion. This shows that the surrounding atmosphere is already saturated with moisture in the shape of watery vapor, which by its pressure prevents the detachment of any more particles of water from the wet bulb.

From observations like these, we find not only the force of vapor and the relative humidity of the atmosphere, but also the exact weight of water contained in a cubic foot of air at the time of observation. From numerical tables, expressly prepared and calculated for this purpose, we discover that sometimes in winter the atmosphere is so excessively dry, that a cubic foot of it, of a zero temperature may contain less than, half a grain of moisture, while the same quantity of air, when saturated with moisture at a temperature of 95 degrees, contains as much as 17 grains of watery vapor.

It may also happen that, although the general atmosphere be considerably dry, yet without motion, there is observable but a very small reduction of temperature in the wet bulb, because if, after the layers of air nearest the wet bulb have been already saturated by the moisture evaporated from the water, there should be no wind or currents of air to remove it, this moisture will hover around the wet bulb, and form an impediment to further evaporation. Hence we see the necessity of moving air or wind to produce energetic evaporation, so that the dryer the air, and the faster it moves, the greater will be the evaporation.

When, however, the whole atmosphere is completely saturated with moisture, no motion of the former, however violent it may be, can induce evaporation from a moist surface.

DISEASED VINE LEAVES.

BY J. S., LANCASTER, PA.

In the *Monthly* for November, 1868, page 344, N. H. R., of Springfield, Ill., states a case of disease in Vine leaves, and wishes for an opinion. I venture to hint at what might greatly contribute to produce the effects stated:

It is well known that the leaves and roots are the principal organs of absorption and nutrition in vegetables. The pores situated on the lower surface of the leaves of woody plants absorb the watery vapors and gases diffused in the atmosphere, and hence this surface is softer and less smooth than the upper, and is generally covered by a light down, which is favorable to the absorption ; while the upper surface, on the contrary, is smoother, generally glabrous, and throws off the fluids which are useless for the nutrition of the plant.

Plants cannot be made to vegetate without water—a certain amount of moisture is essential to the healthy growth : excess of moisture is, of course, equally injurious.

During clear weather, dew is most abundant in calm, serene nights, especially after a rain. However, little dew will fall if the weather has been dry for some time. Dew is commonly more abundant in spring, when plants obtain their vigor and start of growth. Difference in the chemical or mechanical condition of the surface of the surrounding bodies—like a *gravel walk* compared, for instance, with a tan walk or grass plat—has an effect on the quantity of dew which they attract.

A hard, wide gravel walk, as he states, may prove detrimental in two ways : first, by lessening the amount of moisture, and secondly, by increasing the amount of heat by radiation.

Both causes combined, might be sufficient to rob the leaves next the gravel walk of their vital force, by depriving them from the exhalations of vapor, and the greater dryness induced by the heated gravel walk. The result would consequently be what he surmises—"that the reflection of the sun's rays from the wide gravel walk," is no doubt the cause of the trouble, augmented by a deficiency of moisture.

AN HOUR AT WELLESLEY.

BY R. BUIST.

The country seat of H. H. Hunnewell, Esq.,is on the road to South Natick, an easy walk from the village of Wellesley, 14 miles from Boston. Many of your readers have heard of the beauties of this celebrated estate ; and, though my ideas of its grandeur were elevated, yet the half has not been portrayed that made it exceedingly agreeable to your correspondent.

On approaching the grounds, they at once indicated the hand of a master spirit. The Porter at the lodge required our cards. On entering the drive, which was belted with large clumps of Kalmia, Ghent Azaleas, Rhododendrons of hybrid sorts from Catawbiense, vistas of every description were crowded upon us, with a happy disposition of specimen trees. The crimson-leaved Beech is generally seen in specimens ; here it was arching a labyrinth,—and where an extensive vista attracted our view across the lawn, on the right, clumps of select trees in the finest landscape style.

In the recesses, some special object drew the attention; and on the points, rare specimens were prominent. "See, there is a huge Cereus flagelliformis," observed one of our companions ; but on examination, we found a large specimen of the very rare Abies monstrosa pendula.

We now came in view of the Mansion, surrounded with Venetian splendor. Rare Agaves, splendid and perfect specimens of Araucaria, in stone-like tubs, surmounted the balustrades. Now was the grand vista of the lawn as green as an emerald, with a view to the distant hills. We passed on,—nay, we were riveted to the spot, admiring a noble clump of Asiatic plants with expansive tropical foliage, which was flanked with diamond-shaped clumps of Mrs. Pollock Geranium, its tricolored foliage in perfection, and really beautiful to look upon. Gnaphalium lanatum, though not a new plant, is here in a new feature, being used as margins for flower beds—for which purpose its silvery white foliage had a very agreeable effect ; and when used as a vase plant, its pendant branchlets were unique.

Onward we approached imperceptibly the garden and greenhouses, by a serpentine walk studded with roses in bloom, and bounded with Evergreen hedges. We found Mr. Harris, the gardener, engaged, with mechanics, building new houses, altering and repairing others, all in masterly style, without stint of cost.

The rare specimens of plants were rich, embracing Vinca vittata, Areca purpuracea, sapida and Verschaffeltii, with Latania rubra, Rhapis, Seaforthia and Sabals of the finest species. The Graperies and Peach Houses loaded with fruit—the latter trained "la cordon," which has the merit of filling up the houses quicker than any other method : the trees being planted about two feet apart, at an angle of about 34 degrees, and trained to one stem only, which is spurred the whole length, and everything in elegant order.

Mr. Hunnewell now joined us, and we were led to the Grotto Garden, interspersed with rocks, roots and shells, with corresponding plants, and in full view of Lake Waban—the Boat-house very ornate and picturesque.

We took a gentle rise to the right and, behold, such a sight ! The terraced Italian garden mirrored in the glass Lake of Waban,—its terraces and amphitheatre form, its trees clipped into every shape, and the most rigid Abies Balsamea (Balm of Gilead), cut into dense globes ; the

White or Weymouth Pine formed into globe upon globe, even to six stories high, and every item a picture. On a portion of the summit was a balustrade surmounted with large Irish Yews, planted into narrow deep boxes, with a stone finish—a surprise to us until informed that they were housed in winter.

The Pinetum connects with the Italian Garden, and, though the past winter has reduced our hardy evergreens to a very limited number, we here found that Japan was going to enrich our hardy trees to a great extent—price only, at present, is the limit. Their foliage of odd appearance, their growth, graceful in some and grotesque in others, they fill up a blank with great interest. Retinispora glauca, pisifera, obtusa and aurea are perfectly hardy; the Umbrella Tree, (Sciadopitys verticellata,) Pruneropitys elegans, an elegant Yew-like tree, are all great acquisitions.

We survey edgings of Cupressus ericoides (and fine for the purpose,) with Tom Thumb Arborvitæ where Box does not stand the winter; Ivy is also used, but covered during severe weather. Acer polymorpha, with its crimson foliage, and Acer negundo variegata are used in quantity for their diversity. The latter suffers severely about Philadelphia, the summer sun destroying the white portions of the foliage.

The spacious mansion commands a charming view of the Lake, in the rear; and in front, the extensive lawn that appear to reach the hills of another State. Adjoining the mansion is a handsome conservatory, erected of the very best materials, glazed with strong, hammered glass, and at its extreme, is a Pavilion, with a statue of Flora.

The plants were of exuberant growth, and under the very best culture. A specimen of the rare Musa ensete was prominent to our eye. In many of the parterres, Celosia pyramidalis, aurea and versicolor, were freely used, being grown from seed early in the season for the purpose. Another prominent feature we cannot overlook, is the entrance from South Natick. One side of the avenue was planted with the Pinus strobus, (Weymouth Pine,) every one a picture,—indeed, the whole feature of the domain was a masterly composition of taste and talent, the whole having been formed since 1851, only a period of seventeen years.

PURSH'S JOURNAL.

(*Continued.*)

In the nighborhood of the town, I observed frequently Iris,—Leonurus Cardiacea—Prinos verticillatus? Eupatorium perfoliatum—Andromeda paniculata Spiræa salicifolia Cephalanthus occidentalis, Veronica scutellata &cc. I left the collection of Impressions to the care of Mr. Hart to sent them to Dr. Barton.

20.—Still very ill & weak, being not able to bear the least nourishment in my stomack; but I ventured to go to Pittstown on the Lawahanock I travelled on slowly, & still I thought those 10. m. a very good days work in my weak situation; I found Mr Hart there, & took lodging at Mr Dukers, the tavern where he keeps his store at. The road leading the greater part through cultivated lands. I observed nothing this day, but the common weeds. The Susquehannah breaks at this place through a ridge of mountains calld the Lakawannah mountain.

Sunday Jun 21.—I was very anxious of examining this seemingly interesting part of country; &being informed of a very handsome cascade calld the falling spring, on the mountain on the other side of the Lawahannok, I in company of the landlord, set out for that place, this man was led to go with me, in hopes of finding out the place, where by the tradition of this place, a silver mine has been worked on the brook which forms this remarkable cascade. We went through very fertile fields & meadows; Strawberries were found ripe here; Pentstemon pubescens--Erigeron bellidifolium—&c. The shores of the Lawahanok were covered with Viburnum—Cornus—Silver Mapple—& few Oaks mixd here & there with Ash.—The Elder is in these parts more plentyfull, than near to the Sea Shores. About a mile & a half on the other side of the Lawahannok, we came to the gap, where the Susquehannah comes through,—& soon after to the cove in which this remarkable spring comes down; the sides of the mountain is here very steep & comes close to the bank of the river; in a small recess or cove, this small brook falls over a nearly perpendicular rock of from 80 to 100 feet high down: it forms one of the most picturesque & lovely cascades I ever beheld: the place is surrounded with shady trees & the rocks covered with ferns & moss of different kinds--The Nephrodium bulbiferum & marginale are the principal Ferns; Stellaria graminea grows among the moss, with Mitella diphylla &c.--I observed a Orchis, growin in the crevices of the rock, not in flower, but supposed to be O. fimbriata.—Acer pensylvanica, under the falls in flower.—We climed round the precipice to the top of the fall, & followed this run up towards the top of the mountain. This brook has so many smaler falls, that we hardyly were able to come along, but we persisted in it, to the top of the mountain: where we found it having its origin in an altogether impenetrable & inaccessible swamp. I found here Diervilla tournefortii in flower & Acer montanum in seeds; from here we went over the mountain in another direction & home towards the tavern. This walk had been, in my present weak situation very fatiguing to me. On our route home I found Anemone pensylvanica&Geum canadense.—The river shore is covered with Carpinus americana, Water beach & White Mapple & Buttonwood.

22.—As I thought the nighborhood about the falling spring very interesting I took an other excursion to it, to day; Hydrocotyle americana not yet flowering covers a great part of the wet rocks about it; I observed nothing new & as I felt myself very ill, made the best of my way towards the tavern; very much exhausted I arrived there & indeed I apprehended the greatest danger from my situation of health; From the time I was taken with this sickness of stomach & colical complaint at Wilkesbarre, to this day I used the infusion of Eupatorium perfoliatum, which has done me good so often, very freely; but it would do no help this time, my stomach remaining in the same situation, not bearing the least of food or drink without vomiting. Notwithstanding all this. I concluded if possible to leave this place to morrow, & go on towards the beach woods, which I was very anxious to see, without a days time lost, for fear of loosing a chance of seeing something interesting.

23.—Not finding myself sufficiently fit for setting out on the journey, I deferred it for to morrow main time I took a walk to a very rich swamp, belonging to one Mr. Browne I observed a species of Ranunculus seemingly new to me—Veratrum viride in full bloom-Asclepias quadrifolia—Panicum latifol. Lobelia claytoniana—Viburnum & Cornus, vide collection—Callapalustris the white spatha of this plant has a beautiful appearance in the water. On my return I made preparations for getting on my yourney to morrow. A small collection of dryed plants I packed up & left them to the care of Mr. Hart: I observed on the Riverbank a plant without flowers of a strong turpentine like smell; I took it to be Chenopodium Botrys. Mr. Hart furnished me with a letter to a gentleman in the Beach woods, Bloomfield Millbourne, who he said was a man of some information & very much acquainted in that country.

24.—Early this morning I paid my reckoning & went on my route up the Susquehannah, I had to keep the banks of the river for above 10. miles, to a creek calld Buttermilk Falls. Along the steep banks I observed Viola lanceolata, on the shore—Geum floribus albis on the rocks this species has large flowers & is new to me—Campanula foliis linearibus--this may be the rotundifolia, I could not find the radical leaves alive, it is beautifull--Thalictrun (pfl :)--Spirea trifoiata & opulifolia--Polymnia canadensis (:afl:)—Lilium flore erecto patente, foliis verticillatis sparsisque—Pyrola rotundifolia (:afl:) Pentstemon pubescens in great plenty—Hydrangea vulgaris (:afl:) sturacium venos. Among all the plants the Rubus odoratus made a most brilliant show; its beautiful, crimson or rose colored flowers among the very large showy leaves, ornament those steep hills in a most elegant manner. TheRibes Cynosbati with prickly fruit grows plenty among the rocks, Lobelia Claytoniana very frequent & the first specimen of Orchis fimbriata beginning to open its flowers; this is a very different plant from the tall sort I collected last year in the natural meadows on the Alleghanny; I suppose; this last one Muhlenburg has calld Orchis dentata, or incisa, I cannot recollect which. Buttermilk Falls is a small creek coming out of a pond on the mountains; it runs over a bed of rocks & forms a number of falls, it is calculated by nature for mill seats, several of them have been erected on it chiefly Saw mills. From here the timber begins to be chiefly Hemlock mixed now mixed now & then with Beach; I came as far as one Wm. Wall, where I lodged; this place is near the waters of Tunkhannockcreek where the Beachwood properly beginns.—The rocks & stones in this tract of country are generally a coarse grained limestone granit mixed in several places with wacke & glimmer; In the creeks and small runs peples of a basaltick blackish blue wacke, quit clear of any quarz or glimmer are frequently found. Large lumps of budding stone, mixed of various coloured peples, laying in a bed of gray clay mixed with coarse white sand are found plenty. Appearances of real lime stone is scarce.

25.--This morning I proceeded on my yourney by paths narrow, undistinct and though in a dry season very muddy, on account of the springy nature of the soil in this part calld the beach woods & the impregnable shade of the trees—The beautifull Oxalis acetosella made its appearance again with her elegantly painted flowers. I have seen above 20. of the species of this genus from the Cape of Good Hope but non with so handsomely marked a flower; I still think it must be a different plant from the Oxalis acetosella of Europe, as I never admired this common sort there, for its colours, & as far as my recollection goes, the flower is clear white & a great deal smaller than ours here; Michaux I suspect has made a mistaken there. Mitchella repens the first in flower. Nephrodium femineum & thelypteroides cover the ground in open woods. It is remarkable that all those places which are covered on the Oak lands with the Osmunda cinnamomea & interrupta, are here covered with the different species of the more common sorts of Nephrodium. Among the rotten heaps of wood drifted by water or fallen by wind, I found frequently the Fumaria fungosa (:afl:)—Caulophyllum thalictroides (pfl)—Potentilla hirta? Veronica scutellata—Dalibarda fragarioides, Iris P. Viola circaifolia the same as I seen last year at Shenandoah & then calld V. populifolia. This is a very elegant species, the inside of the flower is milk white with purple stripes & yellow eyes at the bottom of the petals, the outside of a fine pale purple, can it be the true Viola striata of Aiton?—Rhus vernix grows very tall, I seen trees 25. feet high, if not more. Hydrophyllum virginicum—Cornus, the Carpinus americana & the Betula carpinifolia is very frequently mixed among the beach & Hemlock. Viburnum lantanoides calld here Shin hobble or Hobble bush on account of its branches taking root and impeding the walk through the woods very much, forms large thickets in several places.

EDITORIAL.

EDIBLE FUNGI.

(*See Frontispiece.*)

Most of us can remember when the Tomato was supposed to be poisonous. This was especially the case in England a quarter of a century ago. He was a bold man who would proceed to eat one raw. The example of America has no doubt done much to render the Tomato popular in England; as popular it is becoming. They take nearly as much interest in the Tomato as we do. All our new kinds are tried there as fast as they appear, and reports made on them. They seem to have considerable success, notwithstanding their dull climate. A recent writer says of the Keyes' Early, that Carter & Co. raised 560 lbs. of fine ripe fruit from a "rod of ground." There is no doubt our example in this vegetable has done much towards extending this luxury over the mother country, much more than would otherwise have been the case. We can receive our reward back again by a lesson from them in edible fungi.

To almost every one there is no greater luxury than a mushroom or a truffle; but how rarely can any one enjoy them. Immense sums of money are spent every year in "spawning" beds, which never develope to anything but disappointment; a few, a very few, partially succeed. If only the varieties which grow everywhere about us could be used, we should be pretty well off without resort to artificial means. But at present there is a wide spread belief that only the one kind is good, all the rest poisonous.

It appears that it is just about the reverse. The poisonous forms are very rare, not more so in numbers than is usual with flowering plants. Nearly all kinds afford a healthy if not a nutritious food.

All this has been known to the learned ones for many years; but it has seemed nearly impossible to break up old prejudices; so the combination principle has to be brought to bear on the vulgar error. Just as in France, large meetings and public dinners have to be held in order to satisfy people of the propriety of eating Horseflesh; so in England, social gatherings are held for the express purpose of dispelling old notions practically, by eating the "pizen" things. An excellent idea occurred to two English ladies: Mrs. Lloyd Wynne, and Lady Dorothy Neville. They offered premiums for the best collections of edible fungi, and results were astonishing. Very few supposed so many common *toadstools* good to eat, and education made its mark that day.

After the award, the gainer of the first premium addressed the audience in relation to the various kinds exhibited. The matter is of such great interest to our readers, that we extract portions of his remarks from the *London Gard. Chronicle:*

"The first species to which he specially alluded, was what is aptly called the Vegetable Beefsteak (*Fistulina hepatica*), of which a very fine specimen was shown. This is said to be the best possible addition to a beefsteak; and indeed, if properly cooked, a steak in itself. Cut in slices, stewed for half an hour, and then fried with gravy, it was said that it might easily be mistaken, if one's eyes were shut, for the animal diet after which it is named, and to which indeed, it has considerable resemblance. Another esculent Fungus, two of which were shown by Mr. Reeves, the chairman, is the Giant Puff-ball (*Lycoperdon giganteum*). A specimen of this, which had been sent a short time ago to Dr. Bull, measured 3 feet 6 inches in circumference, and weighed 6 lbs. Sliced, and fried with yolk of egg, bread crumbs, and fine herbs, the Puff-balls were excellent—in short, as good as a French omelette. The chief thing was to use them in a young state, and certainly before decay had in any way set in; for it should be remembered, that where there is such rapid growth as there is in Funguses, decay also takes place with proportionate speed. Dr. Bull stated that all Puff-balls are wholesome when young. Even Lycoperdon cælatum is perfectly wholesome in a young state, but its flavor is too rank to be generally esteemed."

"The Parasol Agaric, (*Agaricus procerus*) may be readily known by its dry scaly top, loose ring, and the snake-like marks on its stem. There was, however, a species present which bore so much resemblance to this A. procerus, that it might easily be mistaken for it, and that was Agaricus naucinus, which however, has a fixed ring and white stem. Of this Dr. Bull and friends freely partook and enjoyed, thinking it was the A. procerus, except that it was remarked, 'it did not seem quite so good as usual.' It however proved to be A. naucinus, of which many beautiful specimens were shown. It is a delicate Agaric, which may be cooked in all ordinary ways with a satisfactory result. There was, he said, no difficulty in determining these two kinds, both of which were very wholesome; indeed, he said that all those at all like A. procerus were wholesome."

There was one, A. rachodes, of which Mrs. Hussey says, "If the Parasol Agaric is the King of Funguses, Rachodes makes an excellent Viceroy." This species (*Agaricus rachodes*) is one which may be familiar to our readers, as it is found very common all over the United States, at least in the northern portion. Another very common one in the United States to which Dr. Bull referred, is called the *Coprinus cornatus*. Every one must have seen and noticed it. It grows from six to nine inches high, the cap being very long, bell shaped, and so thin and delicate that it very soon dries up, shrivelling away to the top of its long stem, almost to nothing by noon-time if the sun comes out. Dr. Bull says of it, that it is considered by some to be equal in delicate flavor to any mushroom grown. It may be found in the United States six months in the year at least.

Almost every one who has resided long in Europe, knows what are called Fairy Rings. They are brown patches in meadows, always circular, and extending from one to many feet in diameter. They are caused by a species of mushroom called *Marasmius oreades*. One grows, and from its base white threads or mycelia radiate, killing the grass in every direction. It furnishes a first class article of food, as well as, it may be worth noting, a first class argument to those who are trying to convince fruit growers in the United States that fungi will destroy healthy vegetation, without the alternative of any previous disease. Under the name of *Champignon*, this is popular in France, although not yet in use by the English. Soyer's receipt for cooking it is to put it on toast, salt, pepper, and butter; put a clove on the toast, cover with a glass, and bake or broil before the fire for 20 minutes, serve up without removing the cover. We do not remember to have seen this growing in the United States; but not having made fungi specially a study, have no doubt overlooked it. That it does grow, is clear from the fact that a curious specimen is preserved in the Museum of the Academy of Natural Sciences, gathered near Philadelphia, which is remarkable for having two stems to one cap—the two caps having of course become inarched in the embryonic state. It is the only instance we ever heard of, of inarching in the mushroom tribe.

Another fungus, praised by Dr. Bull for its delicious qualities, is also found abundantly with us. This is the *Cantharellus cibarius*. It grows so peculiarly that it must have been frequently noticed. When full grown it is about four inches high and wide, the cap seeming to turn inside out, forming a kind of funnel, with the margin however, curved outward; the plates underneath the cap seem to run down in lines to near the end of the tapering stem. This is also in use in France where they are called *Chanterelles.* Dr. Bull says of it in the article referred to: "This, well cooked, is excellent in every way; and, by itself, sliced, and stewed, with butter, pepper, and salt, makes an excellent dish, with a Mushroom flavor peculiarly its own. If anything unusual is to be done in the culinary way by a French cook, he would ask for Chanterelles, which would probably cost as many guineas as they ought to do shillings, though they are not uncommon near London."

Almost all the Puff Balls (*Lycoperdons*) are considered first class eating. They are taken when very young, cut in slices like our egg plants, and fried in egg, &c.

With regard to poisonous mushrooms, as we have said, they are very few in number, and when once attention is turned to this subject in the United States, they will be as well known as the Poison Vine. Most evil effects that have been published about them, seem to have resulted in eating them in a half putrescent state. In the balls, particularly, it is essential that they should be taken young, and cooked while fresh. What Dr. Bull said of poisonous kinds, we give in the following extract from the *Chronicle.*

"Among poisonous Fungi, the following were those to which Dr. Bull directed attention, and of some of which we shall give illustrations next week, Boletus luridus, which becomes green, and subsequently blue after being cut, was first noticed. Next came one remarkable on account of its beauty, viz.: Agaricus muscarius, of which fine examples were furnished by the chairman. This was said to be one of the most poisonous Fungi known. Dr. Badham, it was related, had sent specimens of it to some ladies to be sketched, intending shortly to call and speak to them about it; but some case of extreme urgency prevented his doing so. The ladies thinking that what came from such an authority was sure to be good, after sketching the specimen, had it cooked, and partook of it, and when Dr. Badham subsequently visited them, he found them, suffering from intoxication, the usual result of eating this Fungus. This Agaric is, indeed, employed in Russia for the purpose of inducing intoxication." As this beautiful fungus is also found in the United States, and in proceeding to become acquainted with this very useful tribe, it is of first importance to know the dangerous ones first, we give *as a frontispiece* this month, this species as an illustration. It was called *muscarius* or Fly mushroom, by Linnæus, because the natives of Sweden believed it killed flies that settled on it; but it has been found not so bad as that, although the expressed juice is most probably a good preventive against destruction by insects. In connection with poisonous kinds, Dr. Bull took occasion to mention that a Parisian medical man undertook to eat any Fungi that might be brought to him, whether poisonous or not, the only precaution taken being to thoroughly steep them in vinegar and water before they were cooked. "Other poisonous kinds named were Agaricus fascicularis, a not uncommon kind; A. sulphureus, a rarity, with a handsome yellow top, and possessing a strong sulphury scent; A. squamosus, a handsome kind, of which he had seen as many as 75 in a cluster; Cyathus vernicosus, C. striatus, and Sphærobolus stellatus. Amongst brightly-colored sorts, in addition to those already mentioned, attention was directed to the scarlet Peziza, and Russula rubra; Bulgaria inquinans, growing like little black buttons on the bark of a Cherry tree, was also brought under the notice of the meeting."

CUTTING GRAIN BEFORE IT IS RIPE.

An opinion extensively prevails in the United States, that grain is better if cut before quite ripe. The last year, Prof. Isidore Pierre, of the University of Caen, in France, determined to try the matter by carefully conducted scientific experiments. He cut the same quantities of wheat, from the same field, on the 6th, 11th, 15th, 20th and 25th of last July, when the whole crop was cut by the mowers.

He found a daily increase of nitrogen and phosphoric acid to the last,—showing that the earlier it was cut the poorer it was in amylaceous and glutinous matters. He thinks that, though there is some loss in shaking out of over ripe grain, it is more than compensated for in the increased value of the perfectly ripened article.

A PROFITABLE TIMBER TREE.

Mr. John Hogg, in a paper before the British Association for the Advancement of Science, estimates one of the mammoth Sequoias he saw in California, at one cent a cubic foot, to be worth $5000. He thought it 1300 years old.

SCRAPS AND QUERIES.

Communications, &c.—We have on hand, for next month, some excellent communications. We also return our thanks to our numerous friends who have favored us with articles the past year. Their great merit is, that they have been entirely voluntary, and actuated by the spirit which freely gives of its knowledge in return for that received from other writers.

During our first year we paid for some articles —but invariably found such to be very inferior matter, mostly made up by reading and not from experience. Often many of our best papers are from practical gardeners, who cannot write correctly, but which prove of such excellent value that we cheerfully re-write them.

We have also to thank many friends who send us newspapers or magazines, with notes of horticultural interest. These we particularly value. The paragraphs should always be marked, as, amongst so many exchanges, they are liable to be overlooked. Assured of the same assistance from friends and correspondents in the future, as in the past, we hope to continue, if not to improve, the interest of our magazine.

The publishers trust to their friends to introduce the magazine to the notice of any new horticulturist. They take no extraneous method to induce people to take it. They would rather it continue as heretofore, to travel on its own merits. Without condemning the policy often pursued, of offering extra inducements, in the shape of trees, seeds, books, &c., they prefer to follow the old plan of giving the full value in the magazine for the $2 charged, and trust to the pleasure and pride which the reader takes in the journal, for its extension in new channels. They would not make the vain boasts, sometimes indulged in by contemporary journals, that the circulation of theirs "exceeds that of all other horticultural magazines combined." They cannot of course know anything about the private business of others. The advertiser must be the best judge of this. In this respect they believe our columns have given *entire satisfaction* to all who have used them; and they hope will warrant an increased use of them the coming season.

The *Gardener's Monthly* is conducted strictly on the cash plan. *It is sent only to those who order it, and pay for it at the commencement of each year.* Now is the time to send in subscriptions for next volume.

To our Exchanges.—We seldom refer to the complimentary notices of the regular daily or weekly newspapers; or our agricultural, horticultural or scientific contemporaries. These notices are so numerous, not only in our own country but in Europe, that we could not, if we would, acknowledge them all. These kind expressions of interest have, in no single instance, been sought; and are, therefore, the more highly appreciated.

If we thought these kind attentionss no more than our due, we should feel like the handsome belle, who thanked no one for the admiration her beauty excited. But we really do not feel that we merit all the good things that have been said of us. We will endeavor to make the *Monthly* all they can wish it to be, and feel much encouraged by their high opinion.

Our Frontispiece.—We need scarcely say that the beautiful frontispiece we give this month is intended for binding in with the volume, in front of the last January number. Every one should preserve and bind their numbers. The volumes become more valuable with age, as the index makes them a fall encyclopedia of horticulture in America—everything of interest in any journal being recorded in our pages.

A Courteous Gentleman.—We do not know but we ought to apologize to our readers for introducing the name of a Mr. A. Featherman into our magazine, in connection with our article the "Lessons of the Year." Unacquainted with him, but supposing, from his admission into a respectable journal, he was a gentleman of some character, anxious for the development of science, we treated his objections politely. In the October number of the *Planter*, we find a paragraph from him again, referring to the Editor of this journal as one "convinced against his will;" "unwilling to learn from those who know better;" and wallowing in such like trashy remarks. We shall leave "Mr. Featherman" alone in his glory.

The American Tag and Label Co. of New York, sends us a sample of a zinc label, in which the name of the fruit or tree is stamped. They can be furnished by the Company so cheaply, and are so neat in appearance, that they may prove of value.

Colored Plates of Fruits.—*W. H. Prestele & Bro.* of *Bloomington, Ills.*, make a business of this, and turn out beautiful pictures of remarkable accuracy.

Keeping Plants in Cellars.—*A Simple Amateur, New York*, writes: "In your excellent observations in the September number, you say that, of the two, you would prefer a good cellar for winter protection of flowering plants, to a greenhouse. Now, I am too kind a friend to you and all other lovers of flowers, to *envy* you. But I much wish I knew as well as you evidently do how to turn a cellar to the best advantage, in reference to my favorite science of Floriculture.

I have a good cellar, free from damp and from frost, and I manage to keep some Zonale Geraniums alive in it, but many things die. I have a difficulty to give light and keep out frost,—consequently, during all severe weather, it is dark.

You could, I am sure, oblige many of your readers besides myself, if you would give us some instructions about keeping such things as can be kept, and how, in a cellar; whether they should or not be watered whilst there, and how often. And again, the names of the kind of flowers that will keep in this way. Can't you class together the kinds that require one kind of treatment—as deciduous, evergreen and herbaceous?

These may seem very simple things to inquire; but remember they may be A, B, C, to you, but not so to a *simple amateur*.

Will Verbenas and Pansies bear cellar treatment?"

[It is nearly impossible to give precise directions for cellar treatment, as we can greenhouses,—for the latter is made expressly for plants, but cellars usually for other things. The one is accommodated to the plants; in the other, the plants have to accommodate themselves to the cellars. Cellars are sometimes warm, sometimes cool, sometimes moist, sometimes dry, sometimes dark and then light, that we can only advise about them in a general way.

Hard-leaved plants, like oranges, lemons, oleanders, pittosporums, &c., will keep in a *dark* cellar that is not warm enough to excite growth. They might want water half a dozen times during winter. Deciduous shrubby plants, as Bouvardias, Fuchsias, Hydrangeas, Pomegranates, Crape Myrtles, also do well in such a place. Verbenas, and soft-foliaged plants do not generally keep in a dark cellar, unless kept regularly just above freezing; with the least heat they will mould. A cellar to keep these must have some *light*. This can be accomplished by having *double windows*, which will exclude frost. A stage may be erected on the inside, near the light opening, and in this way quite tender plants may be preserved.]

Construction of Plant Houses.—A *Lexington, Rockbridge Co., Va.*, correspondent writes: "In the August number of the *Monthly* you commenced a capital article on 'Commercial Plant Houses, by D. R. King,' but have failed to continue it. I feel greatly disappointed that you stopped it, and hope that you will still proceed with it. But if you do not intend to do so, I will be obliged to you to inform me whether it has been printed elsewhere, and how I may obtain a copy. I wish to erect such a building."

[We presume the manuscript will shortly be in our hands.]

Rose Protection.—*N. H. R., Springfield, Ill.* "The sketches of the plan for the winter protection of roses are incorrect, in representing the boxes as having a triangular ground plan. The boxes have *four* sides, two of them being three cornered pieces, and running to a point; and the other two being regular parallelograms 3 ft. long and 1 foot wide. The four, together, are, in appearance, like a common canvass tent, except that the box is 'steeper.'"

[The drawing was made from our correspondent's description, which, it is evident, we did not clearly understand; and, although it would do very well as we sketched it, the real plan, as now described by our correspondent, is much simpler, and easier made. We are very much obliged by the correction.]

Brick-making Machine.—A North Carolina correspondent asks for information about these. There are many on exhibition at fairs and implement shops: but the best we know of, that is in practical use, is by Worden & Evans, of Smyrna, Del. If any of our correspondents know of a better one, we should be glad of the information.

Cabbage Plants in Virginia.—A correspondent says: "This is the second fall in which I have sown Cabbage and Lettuce seed in September, with a failure as to result. The Lettuce did not come up either year, although it succeeded well in the spring, on similar ground. Some of the cabbage seed came up, but the few plants now remaining look poor. The ground is a dark rich clay. No one in this region that I can hear of has succeeded in wintering Cabbage or Lettuce, either in open ground or in cold frames, although the soil is good for the same vegetables in the spring. We have had a wet fall."

[We suppose there is no insurmountable obstacle to success, yet cannot account for the failure reported.]

Cleaning out Choked Pipe.—A correspondent says: "A neighbor of mine opened a line of cement pipes a quarter of a mile long, by starting a large crawfish in at the upper end. This is the second case in which I have known it to succeed; and I know of a case in which it was tried and failed; but in this case a piston, worked vigorously at the upper end, cleared out the obstruction.

W. H. R., Lexington, Va., says: "I wish you would tell your readers how to trim hedges with a *scythe*."

[To trim a hedge with a scythe, it must be grown in the shape of an inverted V, (Λ) so that there are but two faces to it. The hedge must be trimmed while the shoots are soft, in June, and while the second growth is soft in August or September. No great skill is necessary—it is nearly as easy as mowing a meadow.]

Popular Lectures.—We learn, with much pleasure, that Professor Alexander Winchell, of the University of Michigan, proposes to give lectures this winter to any part of the United States which may engage him. He proposes to discourse on geological or general scientific subjects, or on natural theology. Dr. Winchell's address is Ann Arbor, Mich.

Name of Plants—*H. C. H., McGrigor, Iowa.*—It is not easy to name a plant by a single small leaf. Yours may be *Erecthites hieracifolia*, the "Fire weed." The piece with 6 leaves in a whorl, is *Galium triflorum*, the "sweet-scented Bedstraw."

Yeoman's Grape Trellis, of which we have a circular, appears to be a good idea. The wire is tightened by a lever, and loosened, on the approach of cold weather, by a very simple contrivance, by which many hundred yards of wire can be attended to, by a boy, in a few minutes.

BOOKS, CATALOGUES, &C.

The American Entomologist. Edited by C. V. Riley, and B. D. Walsh. Published by R. P. Studley &Co., St. Louis, Mo.

The importance of the study of insects to the gardener can scarely be understood. Weeds and insects are his great enemies, ever on the alert to take advantage of his ignorance, or lack of industry, to defeat his efforts. It is as necessary to know the tactics of the one as the habits of the other. So impressed were we with the importance of Entomological matters to horticulturists, that we gave up a great part of our earlier volumes to insect papers. We were very glad when the Practical Entomologist of Philadelphia relieved us, because it is so much better to do only one thing, if we would do it well; and more direct horticultural matters demanded all our space; and we rejoice still more that the enterprise of our western friends have relieved us of all anxiety in this matter by the publication of this worthy successor to their Philadelphia predecessor.

The third number is now before us, and we can wish it no better success than that every one who subscribes for the *Gardener's Monthly*, will take the *Entomologist* also. Our readers will get full value.

The Practical Farmer.—Published by Paschall Morris, Philadelphia, at $1,50 per year, is one of the most welcome of our agricultural exchanges, always well filled with matter of the highest scientific and practical excellence. The present completes the fifth volume.

Edited and published in one of the best dairy districts in the Union, that fact alone gives it an especial value. Agriculturists at this time of the year are generally discussing what to subscribe for,—they will find the *Practical Farmer* well worthy of their attention.

NEW AND RARE FRUITS.

Westbrook Apple.—We have received from Mr. L. Blodgett, specimens of this apple, with the following letter:

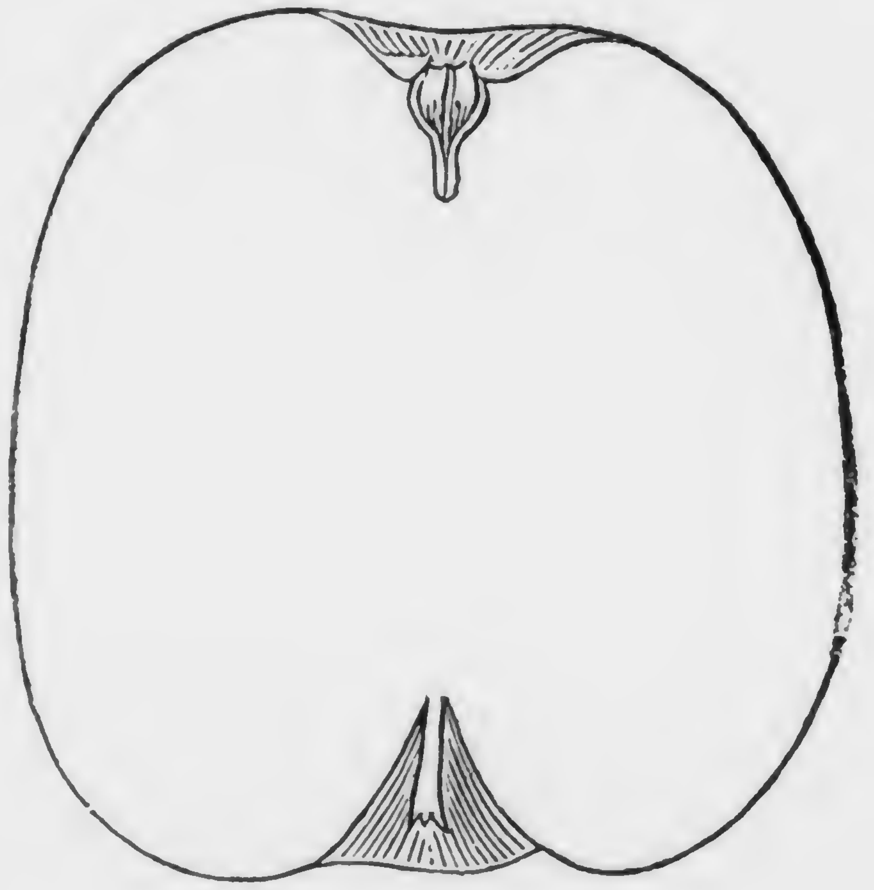
"I send you herewith a sample of my favorite apple, called by my father, who first grafted it from the original tree, the "*Westbrook Apple,*" but locally known as the "Speckled Apple." I beg you to determine whether it has been otherwise named, or has anywhere been described.

The greatest element of value about it is its extremely prolific character; the trees bearing every year, and in alternate years yielding very heavy crops. I have had an average of 25 bushels from thirty trees, and as high as 40 bushels from a single tree.

It has also a great range of uses as to keeping, or ripening. I have had them good in September, and equally sound in February. They are very secure against decay if freely exposed to the air."

[We believe this apple to be distinct from any described. There is already one known in Virginia as Westbrooke, but we have never met with any description of it, and cannot say whether it is the same as this or not.

This one belongs to that class of apples of which Cumberland Spice, Ortley and Porter may be taken as familiar examples. The specimens sent are variable in shape, the small ones being somewhat flat instead of tapering as the large one is. We believe however that small fruit, may always be considered as imperfectly developed fruit, and need not be taken into account as variations from a typical form. Unless the large and perfectly matured fruit vary from one another, the variety may be considered as unvarying in shape of the fruit. We give the accompanying cut and description of this apple from the largest one sent.



Form oblong, regular, or very slightly ribbed, medium to large sized, greenish yellow, covered with small russet dots, with a pale red cheek on the sunny side. Basin small, slightly plaited; eye small, closed; basin broadly ovate; stem medium; cavity medium, with a little russet about the stem; core rather small, well filled with large seeds; flesh white, sub-acid, fine grained; season October to January. A first class fruit.]

NEW AND RARE PLANTS.

Tricyrtis hirta.—Last spring we received for trial, from Mr. John Sherwood, of Bristol Pa., a plant of the above, which has just flowered, (first week in October,) and proves to be a very handsome addition to our fall blooming plants. It is a native of the East Indies, having been described some years ago, by Dr. Wallich, and belongs to the natural order of *Melanthaceæ*, a tribe of plants between lilies and rushes. In a botanical classification, this plant would be placed near the common Solomons's Seal (*Uvularia*) on account of its structure, yet a more different plant in appearance could scarcely be conceived. The plant is of a stiff upright growth, with hairy leaves like our native mocassin flowers (*cypripediums*) growing about eighteen inches or two feet high. The flowers are on short, stiff pedicels, erect, and with a cup-like flower over one inch wide, shaped like a lily. The petals are white, profusely specked with purple, and with an orange spot at the base. They have a sweet delicate fragrance, and our plant has over *one hundred and fifty* expanded at once. forming with its variegated colors a natural pyramid of flowers truly beautiful.

We think it is quite likely to prove hardy; but be that as it may, it will be none the less popular as an accompaniment to the Chrysanthemum for the fall and early winter decoration of our windows and greenhouses. The best way to grow it is to plant it out in the open border during summer. It lifts with a ball, and blooms on unchecked after potting.

Gesneria exoniensis—This is a variety allied to the old Gesneria zebrina, raised by Lucombe, Pince & Co., of England, and said to be an excellent thing for winter flowering in a hothouse.

Dracæna regina.—A magnificent white variegated kind, invaluable whether for decorative purposes or for exhibition.

It is a plant of excellent habit, the leaves being very broad, growing in a spiral form, and when full sized averaging 6 inches in width. In the small plants the variegation shows itself by a white line at the edge of the leaf, but as they increase in size the white becomes more decided, and in larger plants fully one half the leaf is of a beautiful creamy white, this color running into the green, producing a striking contrast, and giving the plant a character altogether unique.

As a decorative plant it will prove invaluable, being of a very robust habit, and standing the changes of temperature well, and for exhibition nothing can possibly be finer.

Introduced by Mr. John G. Veitch, who discovered it when travelling in the South Sea Islands.

Exhibited in England last year at the Exhibitions of the Royal Horticultural Society, Royal Botanic Society, and Crystal Palace, and at Paris, in May, 1867, and at Ghent in March, 1868, it took the highest awards in every case, and was on all sides greatly admired.

FOREIGN INTELLIGENCE.

Clematis John Gould Veitch, (*Double Blue Flowered*).—We cannot too strongly recommend this magnificent double blue flowering Clematis as a most valuable addition to our hardy climbers. It is a profuse bloomer, the flowers being very double, of a large size (averaging 4 inches in diameter), and of a beautiful light blue color. It thrives remarkably well when planted out-of-doors, and when grown in pots it is most striking and very free-blooming, plants grown by us this spring having had as many as 14 beautiful blooms expanded at one time. It was imported direct from Japan, and will doubtless be most extensively grown."—*Carter's Catal.*

Chrysanthemums.—Mr. Broome, of the Temple Gardens, near London, is famous for his success in growing Chrysanthemums. In an article in the *Cottage Gardener* he thus speaks of its

INSECT ENEMIES.

The Chrysanthemum, like the Rose, Holly, Celery, and some other plants, is injured by having its leaves mined by caterpillars, which reside within the leaf, and feed upon the parenchyma or pulpy part of the leaf; for, if the injured leaves are examined, the interior will be found quite destitute of pulp, and to contain one or several small green grubs, of different sizes, which have eaten all the interior, leaving only the two surfaces of the leaf entire, and those very thin.

The grub, when feeding, may be observed through the transparent surface of the leaf, using the two bent hooks or mandibles, which it has the power to retract within or protrude from the mouth like a pair of scrapers, and by the action of which the parenchyma is entirely destroyed, and brought into a state to pass into the mouth of the larva without difficulty.

When the grubs are full grown, they quit the leaves and descend into the earth, where they shortly afterwards gradually become pupæ, and appear to lose all vitality, their form becoming shorter and oval, with the segments distinct and terminated at each end by two obtuse points. In this state the insect remains buried in the ground until the following spring, when the warmth gives birth to the imago, one of the most beautiful of our species of two-winged flies; which, after throwing off its pupa skin, and bursting through the hardened pellicle of the larva, crawls to the surface of the ground and takes flight, generally during the months of July and August—but more or less throughout the summer. There is no doubt but, like the house fly, a succession of generations is produced throughout the season.

The insect, of which the caterpillar mines Chrysanthemum leaves, belongs to the Dipterous or Two-winged genus, Tephra, of Fabricus, and is the Tephritis artemisiæ of Curtis, and Tryptera artemiseæ of Walker, in the "Entomological Magazine," No. XI, page 84. The fly itself is about one-sixth of an inch long, and the expansion of the wings, when fully extended, about one third of an inch.

It is of a pale yellowish-buff color, with a few black hairs, especially at the sides of the thorax (breast). The wings are limpid, and slightly tinged with a yellowish color, having several black spots of various shapes and sizes, and three uninterrupted bands across the body vary, in different specimens, from a rusty brown to a shining black.

The head is buff, with black lateral hairs, and the wings are marked with limpid spots of various forms and sizes. In some specimens, the dark marking of the wings is varied with a pale copper color, and these present a still more beautiful appearance—the under side of the body being of a paler yellow, with the abdomen and thorax highly polished.

To destroy this perfect fly seems impracticable; therefore, the extermination of the insect must be looked to, from the earliest time of their appearance in the caterpillar state. Picking off the infested leaves, or the crushing of the larva between the finger and thumb, without destroying the leaf, appears the best and only mode likely to prove successful, if adopted in the beginning of summer; as the destruction of one grub, at that period, will not only prevent the production of a numerous progeny, but will also insure the better growth of the yet tender plant.

The motions of the fly are also very peculiar, for, when seated upon a leaf in the sunshine, the wings are carried partially extended and at the same time partially elevated; and there is a sidling kind of motion which is possessed in common with but few other two-winged insects. It is generally found in the perfect state basking on the broad leaves of the Laurel and similar leaved plants, as well as on the Chrysanthemum.

HORTICULTURAL NOTICES.

THE FRUIT GROWER'S SOCIETY OF PENNSYLVANIA.

Will hold their Annual meeting at Harrisburg on the third Wednesday in January, in the Orphan's Court Room. This Society always draws together many of the leading Fruit Growers of the State, and its sessions are looked forward to with much interest. The Rev. Jas. Colder is President, and Mr. A. Heiges, of York, Secretary.

HORTICULTURE AT HARRISBURG STATE FAIR.

The large tent so wholly devoted to the display of flowers was capable of holding—on a pinch—twice the number there exhibited. The committee, composed principally of ladies, under the guidance of L. B. Vincent Esq., used their utmost endeavor to make his part of the fair a success. The arrangements were excellent, and the fact of the exhibitors themselves being well pleased with the awards granted, speaks volumes for the the discriminating tact of the committee in charge.

In the centre of the tent and facing both entrances, was a large oval staging filled altogether with plants from the establishment of Mr. J. Kepple. The china pinks in his collection were very fine; representing flowers of every shade, with their delicate pencillings, "finely wrought, and colors there might shame the Tyrian purple." Only a common garden flower, it is true, and yet what a mighty advance has been made, in this species alone, within the past few years. "Gen. Grant" geranium was very prominent, its dwarf habit, and immense trusses of bright scarlet flowers make it a general favorite. There was also another, the name of which I do not remember, which was worthy of being better known. Mr. Kepple had just a number of the double white Tuberose in pots, filling the air around with its pleasing, yet curious fragrance. The roses in this collection received the first premium. There was nothing new or rare among them, indeed the finest flower in the lot was the old "Malmaison." The gloriously colored remontants were miserably represented. Mr. Sheck had the finest collection of Verbenas, prominent among them was that splendid seedling of Dexter Snow, "Thomas Meehan." Petunia "Belle of Baltimore" was here in good condition, and received a premium. The only Cacti shown were by this gentleman.

Robert Graham, the young and enterprising florist of Harrisburg, had a very excellent display of plants. The premium of $10,00 for the best 12 new variegated plants was awarded to him. They were: Chrysanthemum variegatum, Alternanthera versicolor and spathula, the first named slightly different in color, but will make an excellent companion to the well known Amaranthus tricolor, having the same dwarf habit; Gardenia radicans variegata, Salvia fulgens var., Deeringia var., Beaumontia Baumgartnerii, Rose geranium, "Lady Plymouth," this will become invaluable to the bouquet makers; Veronica Andersonii var., Euonymus radicans var., "Annie Williams" geranium, which is the same as "Golden Fleece,"—to call this a variegated plant is a misnomer, the foliage being all one color; and a variegated Sedum completed the number. This was decidedly the best nurseryman's collection, although not receiving the first premium. The plants were clean, short and stocky; a great point to be observed in plant culture.

Mr. F. O'Keefe gr. to J. D. Cameron, Esq., had a large table filled with rare and beautiful foliaged plants, the only collection of the kind on exhibition. The plants were chiefly all young, but healthy and give promise of future excellence when they shall have attained that maturity which time alone can give to this class of plants. A collection of Selaginillas in 12 inch pans were exhibited, the beautiful low growing "densa" being missing. Musas, Azaleas, Caladiums, Marantas, Alocasias and several plants of Ferns, including a rare specimen of Blechnum braziliensis and Thamnopteris nidus, presented a rich treat to those whose tastes lead them to appreciate and love the beautiful in nature. Several baskets by the same exhibitor were fine, particularly two filled with "Ficus repens" and trained in the shape of wasp's nests, one filled with "Nephrolepis *exaltatum*," and another with a good specimen of "Polypodium aureum" growing in the centre. A garden rustic stand filled with growing plants was quite a curiosity.

In cut flowers the competition was in nowise close. Mr. O'Keefe had the only dinner table design here. This was filled with fruits and flowers, and was equal to Mr. O'Keefe's best, which is saying a good deal. A rustic basket of cut flowers by Mr. Graham, the only one there, received a premium of $10. Mr. Kepple had a fanciful design, consisting of two terra-cotta garden vases filled with Dahlias, standing some three feet apart and connected by an arch of flowers in the centre, on which hung a beautiful wreath of white flowers, consisting principally of Roses, Tuberose and Sweet Alyssum. This also received a premium. Messrs. Murdoch, of Pittsburgh received the premium for best collection of cut Dahlias, these were not named. This firm had also a trio of bouquets,—real gems—one white and the other two colored; for the bride and her maids, I presume. These bouquets were not more than four inches in diameter, made of fine flowers and arranged so tastefully that the most fastidious could not well find fault with them; decidedly the best bouquets I have seen for some years. They received the first premium.

A collection of Evergreens exhibited by Chas. Crucknell, Supt. Fairhill Nursery, received the Society's silver medal. They formed the only collection shown and consisted chiefly of Arborvitæs and Junipers.

Before closing, I would suggest to the exhibitors, and particularly to the ladies engaged in-this department of the fair, that they form themselves into a Horticultural Society. It seems to me there is room for one in Harrisburg, and if the ladies take hold of it, as I think they will, the society will be sure to succeed.—*Correspond't.*

* * *

FRUITS AND FLOWERS AT THE NEW YORK STATE FAIR.

Floral Hall was a large tent, 70 feet wide, and 130 in length, and was well filled with a fine collection of Fruits and Flowers. The display of Flowers were fine in the extreme, and were contributed principally by Jas. Vick, Ellwanger & Barry, and Frost & Co. In the best collection of Cut Flowers, Mr. Vick exhibited over one hundred varieties of Gladioli, making a fine display, likewise fine collections of Phlox Drummondii, Asters, Pansies, Dahlias, &c Ellwanger & Barry had a fine collection of choice plants in pots, a fine collection of cut roses, and collections of Dahlias, Verbenas, &c. Frost & Co., had a collection of pot plants, collections of cut flowers, ten week stock, &c.

The collection of fruits, in spite of the very dry summer we had in this neighborhood, was very fine. Of apples 16 entries were made, Ellwanger & Barry, taking the first premium for the best collection of 40 varieties. E. Ware Sylvester, of Lyons, being second; Mr. Sylvester likewise taking the first prize for the best 20 varieties. In the Amateur's class, A. Wilder, of Greece, took the first premium for the best collection of 20 varieties, likewise the best 15, and second with the best 10 varieties. R. H. Brown, of Greece, being second for both the 20 and 15 collections. The first prize for the best 10 varieties was given to Edwin Nicholas.

The show of pears was superb, 22 entries being made. Ellwanger & Barry, had a splendid collection of 201 varieties, for exhibition only, we doubt if any other such collection could have been exhibited by any other party in America. Ellwanger & Barry took the first premium with the best collection of 20 varieties. W. S. Little being second. Ellwanger & Barry was likewise first with the best collection of 15 varieties; second, W. S. Little. Frost & Co., taking the first prize for the best collection of 6 varieties. In the Amateur's class for the best 15 varieties, John H. Bell, of Brighton, was first, J. S. Clarke of Greece, being second. For the best 10 varieties. J. S. Clark was first, James Sprout, of Rochester, being second. For the best 6 varieties, J. H. Bell, stood first, second, J. S. Clarke.

Quinces likewise made quite a display, 13 entries being made. In the professional list, Ellwanger & Barry stood first with a very fine dish of Rea's Mammoth; Frost & Co., being second with the apple or orange. In the Amateur list for the best dish of Quinces, S. L. Eaton, of Brighton, was first, E. S. Haywood, of Brighton, being second.

Ellwanger & Barry had a nice collection of 12 varieties of plums, taking the first premium for the same, there being no competition. The prize for the best dish, was awarded to E. Ware Sylvester, of Lyons; Ellwanger & Barry taking the second premium.

Grapes were fine, as many as 28 entries being made, being the very finest display that has ever been made at a New York State Fair. Ellwanger & Barry had a fine collection of 46 varieties. taking the first premium; Frost & Co., taking the second premium, with a collection of 34 varieties. The premium for the best dish of native grapes, was awarded to the Pleasant Valley Wine Co., with a dish of Iona. Dr. Grant's new grape Eumelan, Diana Hamburgh, Delaware, and a new seedling, called the Downing, competing for the prize. R. Rowley, of Rochester, exhibited a grape called Couilla, which is nothing but Isabella. Dr. Grant showed Eumelan; Dr. Perrine, a seedling called Downing, and Ferris & Cayw

his Diana Hamburgh.

In the Amateur's list Jas. E. Edwards was first with the best collection of native grapes; J. S. Clarke, being second. The premium for the best dish of native grapes was awarded to Jas. E. Edmonds with Delaware. Foreign grapes was shown by Thos. Paul and Paul Spoffard of New York. The first prize was taken by T. Paul; Paul Spoffard being second. The grapes of Mr. Spoffard was much finer than those in the first collection, but being only four varieties (the other being eight) took the second prize. Mr. John Fisher, of Batavia, N. Y., sent a collection of 10 dishes of foreign grapes for exhibition only. weighing in the aggregate 29 lbs, 15 oz. These were superb both in a point of bunch and berry, and had they been better colored, (the vines probably being over cropped) would have compared favorably with grapes as shown in Great Britain. at the great exhibition there. T. G. Yeomans, of Walworth, N. Y., showed a patent grape trellis, which seemed to be useful, and all its exhibitor claimed for it.—*Correspondent.*

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